

The **mathastext** package

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Abstract

The **mathastext** package changes the fonts which are used in math mode for letters, digits and a few other punctuation and symbol signs to replace them with the font as used for the document text. Thus, the package makes it possible to use a quite arbitrary font without worrying too much that it does not have specially designed accompanying math fonts. Also, **mathastext** provides a simple mechanism in order to use more than one math-as-text font in the same document.

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1 What `mathastext` does

1.1 Examples

`mathastext`'s basic aim is to have the same font for text and mathematics. With hundreds of free text fonts packaged for L^AT_EX and only a handful of math ones, chances are your favorite text font does not mix so well with the available math ones; `mathastext` may then help.

Here is an example with Latin Modern typewriter proportional:

Let (X, Y) be two functions of a variable a . If they obey the differential system $(VI_{v,n})$:

$$\begin{aligned} a \frac{d}{da} X &= vX - (1 - X^2) \frac{2na}{1 - a^2} \frac{aX + Y}{1 + aXY} \\ a \frac{d}{da} Y &= -(v + 1)Y + (1 - Y^2) \frac{2na}{1 - a^2} \frac{X + aY}{1 + aXY} \end{aligned}$$

then the quantity $q = a \frac{aX+Y}{X+aY}$ satisfies as function of $b = a^2$ the P_{VI} differential equation:

$$\begin{aligned} \frac{d^2 q}{db^2} &= \frac{1}{2} \left\{ \frac{1}{q} + \frac{1}{q-1} + \frac{1}{q-b} \right\} \left(\frac{dq}{db} \right)^2 - \left\{ \frac{1}{b} + \frac{1}{b-1} + \frac{1}{q-b} \right\} \frac{dq}{db} \\ &\quad + \frac{q(q-1)(q-b)}{b^2(b-1)^2} \left\{ \alpha + \frac{\beta b}{q^2} + \frac{\gamma(b-1)}{(q-1)^2} + \frac{\delta b(b-1)}{(q-b)^2} \right\} \end{aligned}$$

with parameters $(\alpha, \beta, \gamma, \delta) = (\frac{(v+n)^2}{2}, \frac{-(v+n+1)^2}{2}, \frac{n^2}{2}, \frac{1-n^2}{2})$.

Notice that the Latin (and Greek letters) are in upright shape. But perhaps we insist on obeying the standardized habits:

Let (X, Y) be two functions of a variable a . If they obey the differential system $(VI_{v,n})$:

$$\begin{aligned} a \frac{d}{da} X &= vX - (1 - X^2) \frac{2na}{1 - a^2} \frac{aX + Y}{1 + aXY} \\ a \frac{d}{da} Y &= -(v + 1)Y + (1 - Y^2) \frac{2na}{1 - a^2} \frac{X + aY}{1 + aXY} \end{aligned}$$

then the quantity $q = a \frac{aX+Y}{X+aY}$ satisfies as function of $b = a^2$ the P_{VI} differential equation:

$$\begin{aligned} \frac{d^2 q}{db^2} &= \frac{1}{2} \left\{ \frac{1}{q} + \frac{1}{q-1} + \frac{1}{q-b} \right\} \left(\frac{dq}{db} \right)^2 - \left\{ \frac{1}{b} + \frac{1}{b-1} + \frac{1}{q-b} \right\} \frac{dq}{db} \\ &\quad + \frac{q(q-1)(q-b)}{b^2(b-1)^2} \left\{ \alpha + \frac{\beta b}{q^2} + \frac{\gamma(b-1)}{(q-1)^2} + \frac{\delta b(b-1)}{(q-b)^2} \right\} \end{aligned}$$

with parameters $(\alpha, \beta, \gamma, \delta) = (\frac{(v+n)^2}{2}, \frac{-(v+n+1)^2}{2}, \frac{n^2}{2}, \frac{1-n^2}{2})$.

This was typeset using the Times font (available in any T_EX distribution). Let us now be a bit more original and have our mathematics with italic letters from the sans serif font Helvetica, while the letters in text use New Century Schoolbook.

Let (X, Y) be two functions of a variable a . If they obey the differential system $(VI_{\nu,n})$:

$$\begin{aligned} a \frac{d}{da} X &= \nu X - (1 - X^2) \frac{2na}{1 - a^2} \frac{aX + Y}{1 + aXY} \\ a \frac{d}{da} Y &= -(\nu + 1)Y + (1 - Y^2) \frac{2na}{1 - a^2} \frac{X + aY}{1 + aXY} \end{aligned}$$

then the quantity $q = a \frac{aX+Y}{X+aY}$ satisfies as function of $b = a^2$ the P_{VI} differential equation:

$$\begin{aligned} \frac{d^2 q}{db^2} &= \frac{1}{2} \left\{ \frac{1}{q} + \frac{1}{q-1} + \frac{1}{q-b} \right\} \left(\frac{dq}{db} \right)^2 - \left\{ \frac{1}{b} + \frac{1}{b-1} + \frac{1}{q-b} \right\} \frac{dq}{db} \\ &\quad + \frac{q(q-1)(q-b)}{b^2(b-1)^2} \left\{ a + \frac{\beta b}{q^2} + \frac{\gamma(b-1)}{(q-1)^2} + \frac{\delta b(b-1)}{(q-b)^2} \right\} \end{aligned}$$

with parameters $(\alpha, \beta, \gamma, \delta) = (\frac{(\nu+n)^2}{2}, \frac{-(\nu+n+1)^2}{2}, \frac{n^2}{2}, \frac{1-n^2}{2})$.

And after all that, we may wish to return to the default math typesetting (let's shorten the extract here in case the reader makes an indigestion ...):

Let (X, Y) be two functions of a variable a . If they obey the differential system $(VI_{\nu,n})$:

$$\begin{aligned} a \frac{d}{da} X &= \nu X - (1 - X^2) \frac{2na}{1 - a^2} \frac{aX + Y}{1 + aXY} \\ a \frac{d}{da} Y &= -(\nu + 1)Y + (1 - Y^2) \frac{2na}{1 - a^2} \frac{X + aY}{1 + aXY} \end{aligned}$$

then the quantity $q = a \frac{aX+Y}{X+aY}$ satisfies as function of $b = a^2$ the P_{VI} differential equation with parameters $(\alpha, \beta, \gamma, \delta) = (\frac{(\nu+n)^2}{2}, \frac{-(\nu+n+1)^2}{2}, \frac{n^2}{2}, \frac{1-n^2}{2})$.

Notice that the Greek letters also changed according to the *math version*: **mathastext** has indeed some (limited) capabilities to this effect, with its **LGRgreek** option. This document uses the LGR encoded fonts **cm \tt** , **cm \ss** , and **tx \rm** , which are part of standard T_EX distributions.¹

1.2 Overview

1.2.1 Basic use

The initial ideology of **mathastext** was to produce mathematical texts with a very uniform look, not separating math from text as strongly as is usually done.

¹The first two are available (with no need to load explicitly any package in the document) via the combination **cbfonts** (**cbgreek-complete**) & **babel**, and the LGR encoded **tx \rm** font (again no package loading is necessary) is part of the files of the **txfontsb** package.

As soon as one tries out other fonts for text than the Computer Modern ones one realizes how extremely “thin” are the default T_EX fonts for mathematics: they definitely do not fit well visually with the majority of text fonts. With **mathastext** one can get one’s (simple... or not) mathematics typeset in a manner more compatible with the text, without having to look for an especially designed font.

Here is a minimal example of what may go into the preamble:

```
\usepackage[T1]{fontenc}
\usepackage{times}
\usepackage[italic]{mathastext}
```

All letters, digits, and punctuation signs inside math mode will then be typeset in Times.² The exact list of characters concerned by **mathastext** is a subset of the basic ASCII set:

abcdefghijklmnopqrstuvwxyz
 ABCDEFGHIJKLMNOPQRSTUVWXYZ
 0123456789
 !?*,.:;+-=()[]/ # \$ % & < > | { } and \

As one can see, this is a very limited list! some possibilities are offered by **mathastext** for Greek letters and will be described later.

The `ascii` characters ‘ and - are not in the list:

- the derivative sign ‘ is left to its default as the text font glyph ‘ is not, as a rule, a satisfying alternative.³
- for the minus sign **mathastext** uses the endash character –, if available, and not the hyphen character -.

Nothing is changed to the “large” math symbols, except for \prod and \sum in inline math which, like here: $\prod \sum$, will be taken from the Symbol Font if option **symbolmisc** was used.

1.2.2 option **italic**

The **italic** option tells the letters to be in italic shape (they will be upright in operator names), as is the standardized habit.

The built-in placement routines of T_EX in math mode expect the math italic to have some (tiny) white space around them, so that they don’t “stick” to other

²let’s do as if we did not know the excellent `txfonts` package which employs Times for text and has a very complete math support, including many additional mathematical glyphs in comparison to the CM fonts.

³v1.2 adds a customizable tiny space before ‘ to separate it from the previous letter, this is really needed when using upright letters in math mode with the CM derivative glyph. Compare f' with f' .

symbols, such as a Π : compare $i\Pi$ with a pure math mode $if\Pi$. Compare also (as is done in any book on L^AT_EX) the text italic with the math italic (here for Latin Modern):⁴

abcdefghijklmnopqrstuvwxy
abcdefghijklmnopqrstuvwxy

Using the `italic` option will thus never be a fully satisfying substitute to having a true math italic font, but it may be partially satisfying.

1.2.3 sans in math

The following set-up often gives esthetically pleasing results: it is to use the sans-serif member of the font family for math, and the serif for text.

```
\renewcommand\familydefault\sfdefault
\usepackage{mathastext}
\renewcommand\familydefault\rmdefault
\begin{document}
```

1.2.4 always load `mathastext` last

As said already none of the “large” math symbols is modified in any way by `mathastext`. Only loading some math font packages such as `fourier`, `kpfonts`, `mathabx`, `mathdesign`, `txfonts`, etc... will change them. Think of loading these packages before `mathastext`, else they might undo what `mathastext` did. The more common symbols can be taken from the Symbol font (option `symbolmisc`, or `symbolmax` to get also the Greek letters from Symbol).

1.2.5 option `LGRgreek`

There is the issue of Greek letters. Sometimes the text font has Greek glyphs, in LGR encoding (this will be mentioned in the documentation of the font package). Then option `LGRgreek` tells `mathastext` to pick up these Greek letters. And it is possible to specify whether the Greek letters should be upright, or “italic”.⁵ Of course it is always possible to leave the responsibility to set up Greek letters in math mode to packages loaded previously to `mathastext`.

1.2.6 avoid OT1 encoding

We specified in our minimal working example a T1 encoding (LY1 would have been ok, too) because the default OT1 does not have the `<>|{}` and `\` glyphs. If

⁴Text fonts are equipped with ligature rules. The French Cursive font for example has complex ligature rules and they make cohabitation with `mathastext` somewhat difficult in that case.

⁵a more detailed discussion comes next. Note that the default CM and its replacement Latin Modern for european languages are (transparently to the user) extended with LGR encoded fonts from the `cbfonts` (`cbgreek-complete`) package.

`mathastext` detects OT1 as the default encoding it will leave these characters to their defaults from the math fonts.⁶

If `mathastext` detects the obsolete OT1 encoding it does not do anything with `<`, `>`, `|`, `{`, and `}` which (except for monospace fonts) are not available in that encoding. To fully benefit from `mathastext` it is recommended to use some other encoding having these glyphs such as T1 or LY1.

1.3 Main options

1.3.1 The `italic` option

In the initial version 1.0, the Latin letters in mathematical mode assumed the exact same shape as in text mode, and this meant, generally speaking, that they would turn up upright. Doing this gives a very uniform look to the document, so that one has to make an effort and read it with attention, and this was one of the design goals of `mathastext`.

Nevertheless, soon after I posted the initial version of the package to CTAN, I was overwhelmed by numerous⁷ questions⁸ on how to have the letters be in italic shape.

The default is still, as in version 1.0, for everything to be in upright shape, but it suffices to pass to the package the option `italic` to have the Latin letters in math mode in italic shape.⁹ There is also an option `frenchmath` to make the uppercase letters nevertheless upright, because this is the way of traditional French mathematical typography.¹⁰

1.3.2 The `defaultmathsizes` option

The default sizes give for subscripts of subscripts barely legible glyphs (author's opinion!). So `mathastext` makes more reasonable choices. It also redefines `\Huge` and defines a `\HUGE` size, copied from the `moresize` package. To cancel all of this use option `defaultmathsizes`.

1.3.3 The `subdued` option

This option was introduced in v1.15. It provides a manner to switch on the `mathastext-ification` only for limited portions of the document, with the help of the

⁶the `subdued` option, described next, acts a bit otherwise, it forces, contrarily to its usual low-key character, the replacement of OT1 by T1 for the fonts ultimately used with letters and digits in math mode.

⁷this means "more than one."

⁸I thank in particular Tariq PERWEZ and Kevin KLEMENT for their kind remarks (chronological order).

⁹more precisely stated, the value of `\itdefault` is used.

¹⁰more precisely stated, the value of `\shapedefault` is used.

mechanism of math versions. Without the `subdued` option, the *mathastextification* applies by default to the whole of the document (and one may also define additional math versions in the preamble); with the `subdued` option the *mathastextification* is done only in *math versions* distinct from the standard and bold ones.

The previous description is in fact a bit optimistic: `mathastext` was not written initially in order to allow its action to be completely cancelled, and achieving this would require a complete rewrite of large portions of the code. In order to really have the displayed math (almost) as if `mathastext` had not been loaded, one must at a minimum also use the option `defaultmathsizes`. This does not quite suffice, because, for example, the colon, the dot, and the minus sign belong in the default L^AT_EX math mode set-up to three distinct fonts whereas `mathastext` will pick (even subdued) the three of them in the same font, and although it will make a reasonable choice of this font, this is not a return to the previously prevailing situation. And then arbitrary packages could have done arbitrary things... so to be on the safe side one needs the `basic` option which limits the mathastextification to letters and digits (and should also be accompanied by `defaultimath` which prevents redefinition of the `\imath` macro, and `nohbar` which prevents redefinition of the `\hbar` macro...). And even then, in some circumstances, this will still not suffice; for example the *euler* package puts the digits in the same font as the Latin letters in math mode, but the subdued `mathastext` will pick them up in the same font as used in operator names, and in the case of the *euler* package, this is the main document font. So, even subdued, `mathastext` still kicks. But, as I think is illustrated by the examples given at the start of this document, the `subdued` option has its utility, and works reasonably well.

Furthermore, the `subdued` action does *not* extinguish package options `euler-greek`, `symbolgreek` or `symbol`. But LGRgreek is receptive to it.

1.4 Math versions

L^AT_EX has the concept of *math versions*, but most font packages do not define any such version beyond the default normal and bold (that they possibly customize to use such or such math font). The package `unicode-math` for unicode engines fruitfully uses this concept. `mathastext` uses math versions in order to allow the math mode fonts (for letters, digits, punctuation and a few other ascii symbols) used in the different parts of the document to be kept in sync with the text fonts. However the other math symbols (sums, products, integrals, logical signs, etc...) will be the same throughout the document as it is not in `mathastext` power to modify them. There are some possibilities to use different sets of fonts for the Greek letters, though.

The present document illustrated the use of various fonts, here is its preamble (slightly stripped-down):

```

\usepackage{lmodern}
\usepackage[T1]{fontenc}
\usepackage[subdued,italic,defaultmathsizes]{mathastext}
\MTDeclareVersion[n]{lmttt}{T1}{lmttt}{m}{n}
\usepackage{newcent}
\Mathastext[newcent]
\usepackage{times}
\Mathastext[times]
\usepackage[scaled]{helvet}
\renewcommand\familydefault\sfdefault
\Mathastext[helvet]
\begin{document}\MTversion{normal}

```

Let us examine this code: it uses once the command `\MTDeclareVersion` and three times the command `\Mathastext`, thus defining four **math versions**¹¹: `lmttt`, `newcent`, `times`, and `helvet`. The names can be taken arbitrarily (they only need to be suitable arguments to the L^AT_EX `\DeclareMathVersion` command which is invoked internally, so no spaces in the names). Two additional math versions pre-exist: the **normal** and **bold**, which, because there was the `subdued` option, were left untouched by `mathastext`.

Once these **math versions** are defined, `\Mathastextversion{name_of_version}`, or equivalently `\MTversion{name_of_version}` in the body of the document enacts the font switches. As is usual with L^AT_EX one can limit the scope to the inside of a group, or also switch back to the main set-up through issuing `\Mathastextversion{normal}`.

When `\Mathastext` is used in the preamble, it records the current font defaults and (except for the **normal** and **bold** versions under the `subdued` regime) sets up the math font to be used in that version to be the text font as found in `\familydefault`. But it is still possible for a `mathastext`-declared math version to have distinct fonts for text and math:

1. in the body of the T_EX source, an optional argument (the name of a `mathastext`-declared math version) to `\MTversion` is allowed, and for example we used in the source of this document `\MTversion[newcent]{helvet}` meaning “New Century Schoolbook for the text and Helvetica for the math.”
2. there are preamble-only commands `\MTencoding`, `\MTfamily`, `\MTseries`, `\MTshape`, `\MTlettershape` which tell `mathastext` what to do (for *math only*) in each math version declared *afterwards*, independently of the text fonts.

In the body of the document the L^AT_EX command `\mathversion{<version_name>}` will change only the fonts used in math mode. It is recommended to use instead the package command `\mathastextversion` (or its synonyms `\Mathastextversion`, `\MTversion`, `\MTVersion`), with its mandatory argument `{<version_name>}`. It

¹¹math versions are discussed in the document `fntguide.pdf` from your T_EX distribution.

- changes the font used in math mode for letters, digits, operator names, punctuations and other ascii symbols,
- changes the font for the document text (if another version name is additionally passed as optional argument, it uses the corresponding font for text),
- resets the `\(family,rm,sf,tt)defaults` to their values as registered at the time of definition of the version,
- resets the user-defined extra spaces after the symbols \exists , \forall and before $'$ to the values decided in the preamble on a *per version* basis,
- does some additional things when the `subdued` option was specified,
- does some additional set up for Greek letters, when the `LGRgreek` option was used.

These version changing commands have their scopes limited to L^AT_EX environments or groups.

It is sometimes not compatible with `mathastext` to load a font package after it: the font package may contain instructions to modify the math set-up. This may be a bit hidden to the user: for example the `epigrafica` package loads `pxfonts`. Hence it will interfere with `mathastext` if it is loaded after it.¹² But one can use instead `\renewcommand{\rmdefault}{epigrafica}`,¹³ followed with `\Mathastext`, or also `\MTfamily{epigrafica}\Mathastext` which will only change the font in math.

To use `epigrafica` for Greek in math mode one can use the package option `LGRgreek` and the command `\MTgreekfont{epigrafica}\Mathastext`. Or `\usepackage{epigrafica}` followed with `\usepackage[LGRgreek]{mathastext}`.

1.5 Greek letters

The Computer Modern fonts are very light and thin in comparison to many text fonts, and as a result rarely mix well with them (particularly if the Latin letters in math mode are upright). The following options are provided by `mathastext`:

no option: nothing is done by the package, Greek letters are the default Computer Modern ones or have been set-up by other packages; for example by the `fourier` package with option ‘upright’, which gives upright Greek letters.

LGRgreek: this is for fonts which additionally to Latin letters also provide Greek letters in LGR encoding. Here is a list from a 2012 standard T_EX installation: the Computer Modern, Latin Modern, and the CM-LGC fonts; the Greek

¹²may typically give a ‘too many math alphabets’ error message.

¹³sometimes one needs to look in the `.sty` file of the font package to figure out the font name (it is rarely as `epigrafica`, the same as the package name), and, if one does not know the arcana of finding `.fd` files in one’s T_EX distribution, one should look at the log file of a test document to see if for example T1 is available for that font; for `epigrafica` it is not, only OT1 and LGR are possible.

Font Society fonts (such as GFS Didot), the `epigrafica` and `kerkis` packages, the `txfontsb` package which extends the `txfonts` package with LGR-encoded Greek letters; the Droid fonts, the DejaVu fonts, the Comfortaa font, and the Open Sans font. The LGR encoded CM/LM fonts (in serif, sans-serif and typewriter family) give the nice Greek letters in upright shape from the `cbfonts` package. To get these letters in your `mathastext` math mode, you can do the following:

```
% instructions to load the document fonts:
\usepackage{nice_font}
% and then the following:
\renewcommand{\familydefault}{\cmr} % or cmss or cmtt for sans resp. mono
\usepackage[LGRgreek]{mathastext}
\renewcommand{\familydefault}{\rmdefault}
\Mathastext % this re-initializes mathastext with the nice_font,
% without changing the LGR font cmr/cmss/cmtt used for Greek letters
% in math mode.
\begin{document}
```

If you use the `italic` option note that the italic Greek letters from the `cbfonts` are not the same glyphs as the default Greek letters from the OML encoded font `cmmi`.

eulergreek: the Greek letters will be taken from the Euler font (the document does not have to load the `eulervm` package, `mathastext` directly uses some file included in this package, as it provides a mechanism to scale by an arbitrary factor the Euler font.) The letters are upright.

symbolgreek: the Greek letters will be taken from the (Adobe Postscript) Symbol font. A command is provided so that the user can scale the Symbol font to let it better fit with the text font. The letters are upright.

selfGreek: this option concerns only the eleven Greek capitals from the OT1-encoding. It does nothing for the lowercase Greek letters. The encoding used in the document does not have to be OT1.

There is also `LGRgreeks` which tells `mathastext` to pick up in each math version the letters from the LGR encoded font used in that version, and `selfGreeks` to tell `mathastext` to do as for `selfGreek` but separately in all math versions.

The `subdued` option interacts with the options for Greek letters in the following way:

1. in its presence, the `LGRgreek` and `LGRgreeks` options cease to have any effect in the normal and bold math versions,
2. `selfGreek(s)`, `eulergreek` and `symbolgreek` act normally, they are not affected by the presence or absence of `subdued`.

1.5.1 Shape of Greek letters

Classic T_EX uses in math mode italic lowercase and upright uppercase Greek letters. French typography uses upright shape for both lowercase and uppercase. And the ISO standard is to use italic shape for both lowercase and uppercase.

The Euler and Symbol fonts not being available in other than their default upright shape, this question of shapes for Greek letters raises issues only in the case of the options `LGRgreek` and `selfGreek`.

The options `frenchmath`, `itgreek`, `upgreek`, `itGreek` and `upGreek` modify the Greek letter shapes according to the following rules, listed from the lowest to the highest priority:

no option: the lowercase Greek letters are in the same shape as Latin letters, and the uppercase in the same shape as applied to digits and operator names,

`frenchmath`: both lowercase and uppercase are in the same shape as the digits and operator names (most of the time this means “upright shape”, but it can be otherwise),

`itgreek, upgreek`: both lowercase and uppercase are in the `\itdefault`, respectively the `\updefault` shape (at the time of loading the package or at the time of a subsequent call to `\Mathastext` or `\MathastextWillUse`),

`itGreek, upGreek`: same as above, but only for the uppercase letters.

So, the default gives the classic T_EX behavior when option `italic` was passed. Each call to `\Mathastext` (or `\MathastextWillUse`) macros (described in a later section) reinitializes the computation of the shapes.

As mentioned already the package allows to define various “math versions”. In the case of `eulergreek` or `symbolgreek` they apply to all these versions. In the case of the options `LGRgreeks` or `selfGreeks` (notice the additional “s”), each math version is assumed to have its text font available in LGR (or OT1 encoding) and also the shapes will be local to the math version.

Finally version 1.15c of `mathastext` introduces new preamble-only commands to change the shapes, and even the font, used for Greek letters, in case of package options `LGRgreek/selfGreek`. They are `\MTitgreek`, `\MTupgreek`, `\MTitGreek`, `\MTupGreek`: these are used like the options and change only the shapes for the math versions which will be declared *next* in the preamble; and `\MTgreekfont{name_of_font}` will tell the *next* math versions to use that font family. To use this command you need to know the (little) name of a suitable font family available in LGR encoding: for example `lmr`, `txr` (needs `txfonts` package on your system), `DejaVuSerif-TLF` (needs `dejavu` package on your system), etc...

1.6 Extended scope of the math alphabets commands

Since its initial version, some characters usually unaffected by the math alphabet commands `\mathbf`, `\mathtt`, `\mathsf`... had been declared by `mathastext` to be

of ‘variable family type’, meaning that they would obey these commands: for example the hash sign # (input as `\#`), which gives $\#$ under `\mathbf` (`mathastext`, especially in its beginnings, wanted as many characters as possible to be picked up from the text font family and to behave similarly to letters and digits).

So it was especially frustrating that mathematical characters such as +, or <, or] could not be declared of ‘variable family’ as this would, for reasons of the inner workings of T_EX, not be compatible with the automatically decided spaces put by T_EX around them, depending on the context.

A revolutionary ;-) novelty is introduced with version 1.2 of the package:

1. the pre-declared or user-declared (using the `amsmath \DeclareMathOperator` or equivalent) operator names obey the math alphabet commands,
2. all non alphabetical characters treated by `mathastext` (among them !, ?, <, >, =, +, -, (,), [,], \, |, etc...) will also obey the math alphabet commands (when they are not used as delimiters). The spaces added by T_EX before and after are not modified.

Let us compare for example the new behavior of `\mathtt` and `\mathbf`

$$(\sin(\mathbf{n!}) < \cos(\mathbf{m} - \mathbf{p})) \quad [\sin(\mathbf{x} + \mathbf{y}) = \cos(\mathbf{z} - \mathbf{t})]$$

in comparison with the traditional default behavior which affects only the letters (and possibly digits, depending on the packages loaded by the document):

$$(\sin(\mathbf{n!}) < \cos(\mathbf{m} - \mathbf{p})) \quad [\sin(\mathbf{x} + \mathbf{y}) = \cos(\mathbf{z} - \mathbf{t})]$$

The mechanism is of course disabled by default for the normal and bold math versions when in *subdued* mode. It is activated by default for all other math versions, or for all math versions when option `subdued` was not passed to the package. The commands:

```
\operatornamesobeymathalphabets
\operatornamesdonotobeymathalphabets
\nonlettersobeymathalphabets
\nonlettersdonotobeymathalphabets
```

allow to turn on and off this new behavior.^{14 15}

The brace control sequences `\{` and `\}` have their own (supplementary) switch. The reason is that after `\explicitbracesobeymathalphabets`, they regrettably

¹⁴these commands are to be used outside of math mode. Their scope is limited to the current L^AT_EX environment or group. They use the `\everymath` and `\everydisplay` mechanism so if the document needs to modify these token lists it has to do it in a responsible manner, extending not annihilating their previous contents.

¹⁵when in subdued mode, the math alphabets are the default ones, not the ones modified by `mathastext` to use the document text fonts. As a result, matters of font encodings may then give unexpected results, for example for -. On the present document page we switched to a math version to escape from the *subdued* mode and avoid the problem with `\mathbf{-}` giving in the normal (subdued) math version \sim , when ‘non-letters’ are declared to obey math alphabets.

can not be used anymore as delimiters: `\big\{` or `\big\}` cease to function and must be replaced by `\big\lbrace` and `\big\rbrace`. But we can now enjoy `\{a, a > b\}`, `\{a, a > b\}`, `\{a, a > b\}`, or even `\{a, a > b\}`.¹⁶

There is no such restriction with `(,)` or the brackets `[,]`. When used as delimiters though, they will become again unreactive to the math alphabets: the same applies to `<` and `>` or to any of the other characters such as the slashes `/, \`, when they are used as delimiters. This is a rather obvious restriction except possibly for the smallest size delimiters (the so-called ‘small variants’), as all other sizes will be anyway absent from the text fonts. Even the small variants may not be really available in the text fonts: for example the standard `<` used as a delimiter is in L^AT_EX a `\langle`: `\langle`. In standard L^AT_EX documents `\left< x\right>` gives $\langle x \rangle$.

Actually, `mathastext` does try to pick up most of the ‘small variants’ in the text font: `\left<x\right>` gives $\langle x \rangle$ (but `\left<b\right>` gives $\langle b \rangle$.) If you don’t like that use the option `nosmalldelims` (it is indeed perhaps a bit strange to have $\langle x \rangle$ next to $\langle X \rangle$, again before blaming me, consider using `nosmalldelims`.) At any rate, whether ‘small’ or not, delimiters are not under the extended law of math alphabets, this is a general rule of the way `mathastext` manages these things.

Examples: `\mathbf{\langle a,b \rangle}` gives $\langle \mathbf{a}, \mathbf{b} \rangle$. `\mathbf{\left<a,b\right>}` gives $\langle \mathbf{a}, \mathbf{b} \rangle$. `\mathbf{\mathopen{\langle}a,b\mathclose{\rangle}}` gives $\langle \mathbf{a}, \mathbf{b} \rangle$. The L^AT_EX standard behavior for `\mathbf{\mathopen{\langle}a,b\mathclose{\rangle}}` is $\langle \mathbf{a}, \mathbf{b} \rangle$.

1.7 Additional whitespaces

`\MTforallskip`, `\MTexistsskip`, and `\MTprimeskip` are three commands with each a mandatory argument like for example `3mu` plus `1mu` minus `1mu` or just `2.5mu`. They are especially useful when using an upright font in math mode.¹⁷

- compare $\forall B$ with $\forall B$ after `\MTforallskip{2mu}`,
- compare $\exists N$ with $\exists N$ after `\MTexistsskip{2mu}`,
- and finally f' with f' after `\MTprimeskip{2mu}`.

These three commands may be used throughout the document, or also in the preamble, in that case the declared math versions will record the then current values of the skips. `mathastext` applies the following default skips: `0.6667mu` for the skip after \forall , `1mu` for the skip after \exists , and `0.5mu` for the skip before the prime.

The `italic` option resets the defaults from these values to zero. If the document decides to declare a math version with an upright font it is recommended then to use the commands above to explicitly set some skips, either in the preamble before declaring the math version, or in the body when needed.

Also, when the `subdued` option has been used, the normal and bold math versions have by default zero length skips. Nevertheless one can still use at anytime in the body of the document the commands described to change these skips.

¹⁶this last example uses the `\mathnormalbold` additional alphabet defined by `mathastext`.

¹⁷The `mu` is a tiny unit length (‘math unit’) used in math mode.

1.8 Unicode engines

`mathastext` has been made minimally unicode-aware and can be used with \XeTeX or \LuaTeX , but the user is strongly advised to look first at the `mathspec` package, which is a far more powerful package designed for unicode (only for \XeTeX), and to `unicode-math` (to use OpenType math fonts).

Of course `mathastext` is extremely far from being able to define a math font, as it applies basically only to a subset of the 32-127 ascii range, and in particular it does not know how to use a given Unicode font simultaneously for Latin and Greek letters. Again the user is strongly advised to look at `mathspec` and `unicode-math`.

When using `mathastext` with either \XeTeX or \LuaTeX it is recommended to use the `fontspec` package. Else, some of the encoding dependent things done by `mathastext` like using the en-dash character to get a minus sign in math mode will not be put in place. Furthermore, it is *necessary* to load `fontspec` with its `no-math` option, and this *must* happen before loading `mathastext`.

Use `fontspec` with its *no-math* option, and load it *prior* to `mathastext`.

The `amsmath` package, if used, *must* be loaded *prior* to `mathastext`.

A little piece of the functionality of `mathastext` is less fully realized under the \LuaTeX engine than it is with \XeTeX . This is a temporary situation as the needed feature of \LuaTeX has been implemented in its latest development release. I will update `mathastext` when these binaries will have reached the distribution stage

To specify math versions using unicode fonts, use the `fontspec \setmainfont` command (with arbitrary optional features). This command can be issued before loading `mathastext`, or after and then will be followed by a `\Mathastext` command with the name of the version in square brackets.

It is possible to mix unicode fonts and classical \TeX fonts. But this is definitely *not* recommended as `mathastext` decides once and for all what is the font slot of things such as the text endash (used for the minus sign) and this is encoding dependent. So it is best to have either only unicode fonts, or only old-fashioned \TeX fonts in a fixed encoding (T1, or LY1 for example).

The package was not extensively tested with unicode engines, but I include here two examples which compiled successfully with \XeTeX and \LuaTeX , the first one on a Linux machine, the second one on a Mac OS X machine.¹⁸

```
\documentclass{article}
\usepackage[hscale=0.8]{geometry}
\usepackage{multicol}
```

¹⁸running latex on the source of this document `mathastext.dtx` (in a temporary repertory) extracts the test files.

```

\usepackage[no-math]{fontspec}
\usepackage{lmodern}
\usepackage[subdued,italic]{mathastext}
\setmainfont[Color=999999]{Verdana} \Mathastext[Verdana]
\setmainfont[Color=0000FF]{Arial} \Mathastext[Arial]
\setmainfont[Color=00FF00]{DejaVu Serif} \Mathastext[DejaVu]
\MTDeclareVersion{times}{T1}{ptm}{m}{n}
\MTlettershape{n}
\setmainfont[Color=FF0000]{Andale Mono} \Mathastext[Andale]
\begin{document}
\newcommand\TEST[1]{\MTversion{#1}%
\begin{multicols}{2}
\hbox to\columnwidth{\hbox to\columnwidth{\hfil
$abcdefghijklmnopqrstuvwxyz$\hfil}\kern-2.5em{#1}}
\centerline{ $ABCDEFGHIJKLMNopQRSTUVWXYZ$ }
\centerline{ $0123456789$ }
\centerline{ $!\,?\,\*\,,\,\.\,:,\,;\,\,+\,-\,=\,(\,,)\,\,[\,,]\,\,\backslash\,,/\,,\#\,,\%
\,\$,\\,\,\&\,,<\,,>\,,|\\,\,\{\,,\}\,\,\backslash\,\backslash$ }
\columnbreak
\centerline{ abcdefghijklmnopqrstuvwxyz }
\centerline{ ABCDEFGHIJKLMNOPQRSTUVWXYZ }
\centerline{ 0123456789}
\centerline{ !\,?\,\*\,,\,\.\,:,\,;\,\,+\,-\,=\,(\,,)\,\,[\,,]\,\,\backslash\,,/\,,\#\,,\%
\,\$,\\,\,\&\,,<\,,>\,,|\\,\,\{\,,\}\,\,\backslash\,\backslash\char92 }
\end{multicols}}
\begin{multicols}{2}
\centerline{\textbf{math mode}}
\columnbreak
\centerline{ \textbf{text} }
\end{multicols}
\TEST{DejaVu}\TEST{Verdana}\TEST{times}\TEST{Andale}
\TEST{Arial}\TEST{bold}\TEST{normal}
\end{document}

```

And now the same thing with fonts available on Mac OS X:

```

\documentclass{article}
\usepackage[hscale=0.8]{geometry}
\usepackage{multicol}
\usepackage[no-math]{fontspec}
\usepackage{lmodern}
\usepackage[subdued,italic]{mathastext}
\setmainfont[Color=FF0000]{Hoefler Text} \Mathastext[Hoefler]
\setmainfont[Color=336633]{American Typewriter}\Mathastext[Typewriter]
\setmainfont[Color=0000FF]{Herculanum} \Mathastext[Herculanum]
\setmainfont[Color=FF00FF]{Didot} \Mathastext[Didot]
\setmainfont[Color=999999]{Comic Sans MS} \Mathastext[Comic]
\begin{document}
--- copy here the code from the previous example ---
\TEST{Didot}\TEST{Comic}\TEST{normal}\TEST{Herculanum}

```

```
\TEST{Hoefler}\TEST{Typewriter}\TEST{bold}  
\end{document}
```

2 Package options and commands

2.1 Summary of main options

italic, frenchmath: italic letters in math, upright uppercase if **frenchmath**.

subdued: acts in a subdued way. The L^AT_EX normal and bold math versions are left (quasi) unchanged. With version 1.15e of the package this statement applies also to the math alphabets `\mathbf`, `\mathit`, `\mathsf`, and `\mathtt` (and not only to `\mathnormal` and `\mathrm` as in previous versions.)

LGRgreek, eulergreek, symbolgreek: the Greek letters will be taken, respectively from the text font itself (in LGR encoding), or from the Euler font, or from the Postscript Symbol font.

symbolmax: all characters other than letters and digits, are taken from the Symbol font. This option also makes a number of further glyphs available, such as some basic mathematical arrows, and the sum and product signs. For documents with very simple needs in mathematical symbols, **mathastext** with option **symbolmax** may give in the end a PDF file quite smaller than the one one would get without the package.

defaultmathsizes: **mathastext** sets up bigger sizes for subscripts (it also copies code from the **moresize** package to redefine `\Huge` and define `\HUGE`). Use this option to prevent it from doing so.

defaultalphabets: by default, **mathastext** redeclares the math alphabets `\mathrm`, `\mathit`, `\mathtt` etc... (but not `\mathcal` of course) to refer to the current document text fonts (at the time of loading the package and in each **mathastext** math version). Use this option to prevent it from doing so (each alphabet also has its own disabling option).

2.2 Miscellaneous

the en-dash as minus sign: Very often the - character from the text font does not give a good minus sign. So by default, the package uses the en-dash sign `–`. Use **noendash** to deactivate it. Starting with version 1.12 of the package this ‘en-dash as minus’ should work in all encodings, including Unicode (if **fontspec** has been loaded).

amsmath: the behavior of the `\DeclareMathOperator` command of **amsmath** is slightly modified by **mathastext**. This command initially allows crazy things like `\DeclareMathOperator\crazy{m.ch-in'tr/u:c}` and then the `.`, `-`, `'`, `/` and

: will be typeset in the roman font. But the font number was hardcoded in the macro and furthermore the code of `amsmath` would cause an error with Unicode engine as soon as some Unicode code is assigned to the minus character.¹⁹ This specific issue will perhaps be fixed by some hypothetic future release of `amsmath`, or by other packages providing patches, but I decided for a preemptive strike. As a result the declaration above will not cause an error when `\crazy` is used with a Unicode engine, but there are now some spacings around the punctuation characters. To avoid this use (also with `LATEX`):

```
\DeclareMathOperator\crazy{m{.}ch{-}in{'}tr{/}u{:}c}
```

Note though that the quote ' will be typeset as a derivative sign '.

hbar: The definition of `\hbar` inherited from default `LATEX` will in our context make use of the `h` of the current math font (so for us, it is also the text font, perhaps in italic shape), but the bar accross the `h` will come from the original default math font for letters (usually `cmmi`), and furthermore its placement on the `h` can be odd-looking. So we redefine `\hbar` to use only the text font (and this will be aware of the `italic` option). Our construction does not always give an optimal result (and its scope is limited to the `OT1`, `LY1` and `T1` encodings), so an option `nohbar` deactivates it. There is no `\hslash` provided by the package, though. The version 1.12 of the package when dealing with a Unicode font tries to get the `\hbar` directly as a glyph from the font.

dotless i and j: By default the package redefines `\i` and `\j` to give the dotless i and j (if it exists at all), *also in math mode*, in the text font. Will overwrite the default commands `\imath` and `\jmath`. In version 1.12 of the package this should work in all encodings, including Unicode (it is then assumed that `fontspec` has been loaded, and of course that the glyphs are indeed in the font).

X_YTeX and Lua^ATeX: for the en-dash and the dotless i and j, the package expects to detect either the EU1 encoding for X_YTeX or the EU2 encoding for Lua^ATeX (this will be true if `fontspec` was loaded), or one of `OT1`, `LY1` or `T1`, else it will renounce and not attempt to access the en-dash or the dotless i and j glyphs. With `LATEX` and `PdFLATEX`, there is no such limitation and all 8bit-encodings (containing these glyphs) should be ok.

fontspec: one more note to users of X_YTeX/Lua^ATeX with `fontspec`: it has to be loaded with the option `no-math`, and before `mathastext`.

vec accent: The default `\vec` accent is not appropriate for upright letters, so `mathastext` provides a `\fouriervec` which takes its glyph in a Fourier font,

¹⁹To the experts: the `sin`, `cos`, ... operator names are *not* defined by `amsmath` with the help of the `\DeclareMathOperator` macro, hence are not the cause of an error in X_YTeX/Lua^ATeX. What `mathastext` does is to let to relax the `\newmcodes@` macro, so it is possible to save it before loading `mathastext` and re-establish later, if really really this is what you want.

and an Ersatz `\pmvec` which is reasonably good looking on upright letters and works with the `\rightarrow` glyph. Contrarily to version 1.0, the default `\vec` is not overwritten with `\fouriervec`. And contrarily to version 1.1, one now needs to pass the option `fouriervec` to have the math accent `\fouriervec` defined by the package.

- math alphabets:**
- We define a new math alphabet command `\mathnormalbold` which gives direct access to the bold version of the `\mathnormal` alphabet (rather than using either the `\bm` command from the `bm` package or the `\boldsymbol` command from the `amssymb` package). As it does not exist in the default L^AT_EX math font set-up, this alphabet is *not* subjected to the subdued option action.
 - The other math alphabet changing commands defined by the package are `\MathEulerBold`, `\MathEuler` and `\MathPSymbol`.
 - `\mathnormal`, `\mathrm`, `\mathbf`, `\mathit`, `\mathsf` and `\mathtt` are modified to make reference to the document text fonts (this can be disabled by suitable package options).
 - version 1.2 of `mathastext` has extended the scope of the math alphabets to apply to non-alphabetical characters and to operator names. This respects the automatic white spaces added by T_EX around math symbols.

math accents: an option `mathaccents` is provided to pick up the accents in math mode from the text font, but the package knows only T1, LY1 or OT1-compatible encodings.

Regarding the encoding-dependent glyphs: the en-dash, the dotless i and j, the math accents, the hbar, are encoding dependent and the relevant decisions are made once by `mathastext` at the time it is loaded and are applied to all declared math versions. So you can use math versions with different encodings but, regarding these characters only those with the same encoding as the normal math version will display them correctly.

It is thus recommended that all declared `mathastext` math versions use the same font encoding.

2.3 Commands

2.3.1 Preamble-only commands

Nothing is necessary besides loading `mathastext`, possibly with some customizing options. The following commands provide enhancements to the basic use of the package.

- `\Mathastext` (or `\mathastext`): reinitializes `mathastext` according to the current defaults of encoding, family, series and shape.²⁰
 - It can also be preceded optionally by one or more of²¹ `\MTencoding{<enc>}`, `\MTfamily{<fam>}`, `\MTseries{<ser>}`, `\MTshape{<sh>}`, and, new with version 1.1, `\MTlettershape{<sh>}`. For example valid values are, respectively, `<T1>`, `<phv>`, `<m>`, `<n>`, and `<it>`: this is the Helvetica font in T1-encoding, regular (medium) series, upright shape, and the letters will be in italic shape. Once used their effect applies to all succeeding calls to `\Mathastext`, and can only be undone by using them again.
 - **math versions:** starting with version 1.12 `\Mathastext` accepts an optional argument, which will serve as a name to designate the corresponding math version (without optional argument `\Mathastext` redefines the default normal and bold versions.) This argument, being optional, must be enclosed within square brackets.²²
- `\MTWillUse[<ltsh>]{<enc>}{<fam>}{<ser>}{<sh>}`: tells `mathastext` to use the font with the specified encoding, family, series, and shape for the letters and digits (and all other afflicted characters) in math mode. The optional argument `<ltsh>` specifies a shape for the letters, for example `\itdefault`, or directly `<it>` or `<sc>`.
- `\MTDeclareVersion[<ltsh>]{<name>}{<enc>}{<fam>}{<ser>}{<sh>}`: declares that the document will have access to the font with the specified characteristics, under the math version name `<name>`. For example:

```
\MTDeclareVersion[sc]{palatino}{T1}{ppl}{b}{sl}
```

declares under the name `palatino` a version where mathematics will be typeset using the Palatino font in T1-encoding, bold, slanted, and the letters will in fact be in caps and small caps (and bold).²³ When the optional argument is absent, and `mathastext` was loaded with the `italic` option, then the default letter shape will be `it`,²⁴ else letters will have the same shape as used for digits and operator-names.
- `\MTboldvariant{<var>}`: when used before `\Mathastext`, specifies which bold (`b`, `sb`, `bx`, ...) to be used by `\mathbf` (and `\boldmath`). Default is the `\bfdefault` at the time of loading `mathastext`. When used before the declaration of a version, decides the way `\mathbf` will act in this version.

²⁰updates also the font and shapes for the Greek letters (`LGRgreek` option), and the skips to be inserted after the symbols \forall and \exists , see *infra*.

²¹these commands exist also with long names: `\Mathastextencoding`, etc. . . The same applies to the other commands mentioned in this section.

²²The allowed version names are as for the \LaTeX `\DeclareMathVersion` macro. Do not use “normal” or “bold”; this is already taken care of by a call to `\Mathastext` without optional argument.

²³I do not especially recommend to use this in real life!

²⁴more precisely, the shape is the latest value passed in one of the previously used package commands to specify the shape of letters, or the `\itdefault` of the time of loading the package.

- `\MTEulerScale{⟨factor⟩}`: scales the Euler font by $\langle factor \rangle$.
- `\MTSymbolScale{⟨factor⟩}`: scales the Symbol font by $\langle factor \rangle$.
- `\MTitgreek`, `\MTupgreek`, `\MTitGreek`, `\MTupGreek`: optional commands, active only in the case of the `LGRgreek` option, to decide the shape of the Greek letters in the versions which will be declared next.
- `\MTgreekfont{⟨fontfamily⟩}`: optional command with a mandatory argument which specifies the font for Greek letters in all `mathastext` math versions declared afterwards via `\Mathastext` or `\MTDeclareVersion`. Only effective with `LGRgreek` option.

2.3.2 Commands usable everywhere

- `\MTexistsskip{⟨math glue⟩}`: specifies the amount of skip or more generally glue to put after each \exists math symbol. Indeed, upright letters (or digits for that matter) often appear to be positioned a bit too close to the quantifier: $\exists B$. The package default is to add a `1mu` skip (this default is set to zero in the case of `italic`): $\exists B$. One can change the default with the following syntax: `\MTexistsskip{2mu plus 1mu minus 1mu}`, which if used in the preamble and followed with a `\Mathastext` command (or `\MTDeclareVersion`), will be recorded in the definition of this math version (and subsequent ones). One may also use the command at any time in the document. In the case of the option `subdued`, the skips are set to zero for the normal and bold math versions. In the case of the option `italic`, the default skip is set to zero.
- `\MTforallskip{⟨math glue⟩}`: the default is to add a `.6667mu` math skip after each \forall (except with the option `italic` for which the default is set to zero). Compare $\forall F$ (has the skip) with $\forall F$ (has no skip). Use this command in the preamble to set up the skip or glue to be used in the *next to be declared* math versions. In the case of the option `subdued`, the skips are set to be zero by default in the normal and bold math versions. In the case of the option `italic`, the default skip is zero for all math versions. One may use the command also at any time in the document.
- `\MTprimeskip{⟨math glue⟩}`: the default is to add a `0.5mu` skip before the derivative glyph, except for the `italic` option, and except in the normal and bold math versions with option `subdued`. The same observations apply.
- `\operatornamesobeymathalphabets`, `\operatornamesdonotobeymathalphabets`, `\nonlettersobeymathalphabets`, `\nonlettersdonotobeymathalphabets`, `\explicitbracesobeymathalphabets`, `\explicitbracesdonotobeymathalphabets`: these commands without argument may be used at any time in the document, and what they do is in their names. The ‘explicit braces thing’ applies only when the ‘non letters thing’ is active. When a

`\MTversion{<version_name>}` (or equivalently `\mathastext{<version_name>}`) command is encountered the default behavior is (re)-activated: it is to obey math alphabets, except for the normal and bold math versions under the subdued option. The status for the braces is left to its previous state.

2.3.3 Body-only commands

- `\MTVersion[<nametext>]{<namemath>}`:²⁵ in the absence of the optional argument changes simultaneously the text and the math fonts to be the fonts corresponding to the version `<namemath>`. If there is an optional argument then the text fonts will use `<nametext>` and the math mode will use `<namemath>`. To change only the math fonts, use the L^AT_EX command `\mathversion`. However this is not recommended as `mathastext` does a bit of additional configuration when invoked with `\MTversion`.

All further commands are for math mode only.

- `\hbar`: this is constructed (in a way compatible with the `italic` option) from the `h` letter and the `ˉ` accent from the `mathastext` font. Note that `\mathrm{\hbar}` and `\mathbf{\hbar}` should work and that `\hbar` does scale in subscripts and exponents. Only for T1 and OT1 (or LY1) encodings.
- `\fouriervec`: this is a `\vec` accent taken from the Fourier font; the `fourier` package need not be loaded. Active only if option `fouriervec`.
- `\pmvec`: this provides a poor man `\vec` accent command, for upright letters. It uses the right arrow. Does not change size in subscripts and exponents.
- `\mathnormal`, `\mathrm`, `\mathbf`, `\mathit`, `\mathsf`, `\mathtt`: modifications of the original `\mathnormal`, `\mathrm`, `\mathbf`, `\mathit`, `\mathsf`, `\mathtt` to use the `mathastextified` font. The underlying internal L^AT_EX structures related to the original commands are not overwritten, so the original commands can be saved under other names before `\usepackage{mathastext}`, to be used in case of necessity (this is what option `subdued` does.)
- `\mathnormalbold`: a bold version of `\mathnormal`. Differs from `\mathbf` when the `italic` option has been used, or when use has been made of `\MTlettershape` to specify a shape for letters distinct from the one for digits and operator names, or similarly when the math version has been declared via `\MTDeclareVersion` with its optional parameter for shape of letters.
- `\inodot`, `\jnodot`: the corresponding glyphs in the chosen font for math mode. By default, will overwrite `\imath` and `\jmath`. With version 1.12 by default `\i` and `\j` work also in math mode and give then `\inodot`, resp. `\jnodot`. This should work for all 8bit-encodings having these glyphs, and also in Unicode.

²⁵`\MTVersion` is also available as `\MTversion`, `\Mathastextversion` and `\mathastextversion`.

- `\MathEuler`, `\MathEulerBold`: math alphabets to access all the glyphs of the Euler font, if option `eulergreek` (or `eulerdigits`) was passed to the package.
- `\MathPSymbol`: math alphabet to access the Symbol font.
- when one of the options `symbolgreek`, `eulergreek`, or `selfGreek` is passed to the package the capital Greek letters which look like their Latin counterparts acquire names: `\Digamma`, `\Alpha`, `\Beta`, `\Epsilon`, `\Zeta`, `\Eta`, `\Iota`, `\Kappa`, `\Mu`, `\Nu`, `\Omicron`, `\Rho`, `\Tau`, `\Chi` (no `\Digamma` for Symbol). Also an `\omicron` control sequence is provided.
- LGR Greek and ‘var’-letters: only the `\varsigma` is available in this encoding, so using for example `\varphi` will load the previous default math font. It might thus be suitable when recompiling already written L^AT_EX sources to add to the preamble `\let\varphi=\phi`, `\let\varepsilon=\epsilon`, etc..., in case only the ‘variant’ form of the letter was used in the documents.
- Miscellaneous mathematical symbols from the postscript Symbol font are made available (or replaced) when option `symbolmisc` is passed. They are `\prod` \prod `\sum` \sum `\implies` \Rightarrow `\impliedby` \Leftarrow `\iff` \iff `\shorttiff` \Leftrightarrow `\to` \rightarrow `\longto` \longrightarrow `\mapsto` \mapsto `\longmapsto` \longmapsto `\aleph` \aleph `\infty` ∞ `\emptyset` \emptyset `\surd` \surd `\nabla` ∇ `\angle` \angle `\forall` \forall `\exists` \exists `\neg` \neg `\clubsuit` \clubsuit `\diamondsuit` \diamondsuit `\heartsuit` \heartsuit `\spadesuit` \spadesuit `\smallint` \int `\wedge` \wedge `\vee` \vee `\cap` \cap `\cup` \cup `\bullet` \bullet `\div` \div `\otimes` \otimes `\oplus` \oplus `\pm` \pm `\ast` \ast `\times` \times `\propto` \propto `\mid` \mid `\leq` \leq `\geq` \geq `\approx` \approx `\supset` \supset `\subset` \subset `\supseteq` \supseteq `\subseteq` \subseteq `\in` \in `\sim` \sim `\cong` \cong `\perp` \perp `\equiv` \equiv `\notin` \notin `\langle` \langle `\rangle` \rangle . And a `\DotTriangle` \therefore is made available by option `symbolre` (which overwrites `\Re` and `\Im`: \Re , \Im). The `\infty` and `\propto` have these names to leave up to the user the choice to replace (or no) the original (larger) `\infty` and `\propto`.

Regarding the `\prod` and `\sum` commands: they will use the Symbol glyphs \prod \sum in inline math, and in display math the Computer Modern ones (or whatever is set up by other packages) :

$$\prod \sum$$

The package provides `\prod` `\sum`: if one really wants in all situations the Symbol glyphs, one can do `\let\prod\prod` and `\let\sum\sum`. Also `\defaultprod` and `\defaultsum` will refer to the `\prod` and `\sum` before redefinition by the package: this is to allow constructs such as `\displaystyle\defaultprod` or `\textstyle\defaultprod`, because they would not work with the `\prod` and `\sum` as re-defined by the package.

2.4 Complete list of options

- `basic`: only mathastextify letters and digits.

- **subdued**: do not change the default fonts or the math alphabets in math mode for the normal and bold math versions, turn on the **mathastext**-ification only after an explicit `\MTversion` (or `\mathastextversion`) command activating an additional math version as declared in the preamble.
- **italic**: the letters default to italic shape in math mode.
- **frenchmath**: italic lowercase Latin letters, but uppercase Latin letters in the same font as for digits and operator names. In general this means that they will be upright. In case of the **LGRgreek** option, **frenchmath** influences also the shape of the Greek letters.
- **endash**, **emdash**: use the text font en-dash (–) or even the em-dash (—, but this seems crazy) for the minus sign rather than -. **endash** option is default for the package.
- **noendash**: the minus sign will be the - from the text font, not the en-dash –.
- **nohbar**: prevents **mathastext** from defining its own `\hbar`.
- **nolessnomore**: besides `! ? * , . : ; + - = () [] / # $ % &` **mathastext** treats also `< > | { }` and `\`. Use this option to not do it. The option **nolessnomore** is activated by default in case of OT1-encoding.
- further excluding options: **noexclam** `! ?`, **noasterisk** `*`, **nopunctuation** `, . : ;`, **no-plus**, **nominus**, **noplusnominus** `+ -`, **noequal** `=`, **noparenthesis** `() []`, **nospecials** `# $ % &` and **nodigits**.
- **alldelims**: true by default, means that the characters excluded by **nolessnomore** are treated. Use this option in case of a mono-width OT1-encoded font.
- **nosmalldelims**: this prevents **mathastext** from trying to pick up in the text font the ‘small variants’ of some math delimiters; it only affects what happens when a character such as a left parenthesis (or [is used as a delimiter, and T_EX has chosen the smallest sized variant. This has no impact on what happens when they are not used as delimiters: then if not disabled by corresponding options these characters are always picked up from the text font.
- **symbolgreek**, **symboldigits**: to let Greek letters (digits) use the Symbol font.
- **symbolre**: replaces `\Re` and `\Im` by the Symbol glyphs \Re , \Im and defines a `\DotTriangle` command ($\dot{\triangle}$).
- **symbolmisc**: takes quite a few glyphs, including logical arrows, product and sum signs from Symbol. They are listed *supra*. A `\renewcommand{\int}{\smallint}` will maximize even more the use of the Symbol font.

- `symboldelimiters`: the characters apart from letters and digits will be taken from the Symbol font.
- `symbol`: combines `symbolgreek`, `symbolre`, and `symbolmisc`.
- `symbolmax`: combines `symbol` and `symboldelimiters`.
- `eulergreek`, `eulerdigits`: to let Greek letters (digits) use the Euler font.
- `LGRgreek`: this is for a font which is also available in LGR-encoding. It is possible to change the font per math version, via the use of the `\MTgreekfont` command in the preamble.
- `LGRgreeks`: each declared math version will be supposed to be with a font which is also available in LGR-encoding.
- `selfGreek`: this is for a font which is also available in OT1-encoding and contains the glyphs for the default eleven capital Greek letters.
- `selfGreeks`: each declared math version will be supposed to be with a font with the eleven capital Greek letters in its OT1-encoded version.
- `upgreek`, `itgreek`, `upGreek`, `itGreek`: options to tell to use `\itdefault` or `\updefault` for the lowercase and uppercase (or only the uppercase) Greek letters. Only operant in the case of the `LGRgreek(s)` and `selfGreek(s)` options.
- `mathaccents`: use the text font also for the math accents. As in vanilla L^AT_EX, they are taken from the font for the digits and `\log`-like names. Obey the alphabet changing commands. Will work only for T1, LY1, or OT1-compatible encodings.
- `defaulttbf`, `defaulttit`, `defaulttsf`, `defaultttt`: do not set up, respectively, the `\mathbf`, `\mathit`, `\mathsf`, and `\mathtt` commands to use the mathastext-ified font. This also prevents `mathastext` to create internally `\Mathxx` alphabets (it never overwrites the original `\mathxx` things but let `\mathxx` point to `\Mathxx` instead), so one can use these options if one encounters a ‘too many math alphabets’ L^AT_EX error.
- `defaultnormal`, `defaulttrm`: do not identify the default `\mathnormal` (resp. `\mathrm`) with the newly created `\Mathnormal` (resp. `\Mathrm`) commands which use the mathastextified fonts in each math version.
- `defaultalphabets`: all the `defaulttxx` options together, and additionally tells `mathastext` not to create the `\mathnormalbold` alphabet either.
- `defaultimath`: do not overwrite `\imath` and `\jmath`, do not extend `\i` and `\j` to math mode use.

- `defaultmathsizes`: do not change the L^AT_EX defaults for the sizes of exponents and subscripts.
- `fouriervec`: provides a `\fouriervec` command. The user can then add in the preamble `\let\vec=\fouriervec`. There is also always available a “poor man” vec accent `\pmvec` for upright letters.

Thanks to Kevin KLEMENT, Tariq PERWEZ and Ricard TORRES for sending bug reports and feature requests when the first version of the package was issued.

Numerous examples will be found there:
<http://jf.burnol.free.fr/mathastext.html>
<http://jf.burnol.free.fr/showcase.html>

3 Implementation

```
1 \ProvidesPackage{mathastext}
2 [2012/12/20 v1.2 Use the text font in math mode (jfB)]
3 \NeedsTeXFormat{LaTeX2e}
```

Testing for XeTeX and LuaLaTeX. I should load some package for this code picked up somewhere.

```
4 \newif\ifXeTeX
5 \begingroup\expandafter\expandafter\expandafter\endgroup
6 \expandafter\ifx\csname XeTeXinterchartoks\endcsname\relax
7   \XeTeXfalse
8 \else
9   \XeTeXtrue
10 \fi
11 \newif\ifLuaTeX
12 \begingroup\expandafter\expandafter\expandafter\endgroup
13 \expandafter\ifx\csname directlua\endcsname\relax
14   \LuaTeXfalse
15 \else
16   \LuaTeXtrue
17 \fi
```

v1.2: all inner macros of `mathastext` now starts with `\mst@` for a cleaner namespace. Let’s cross fingers and hope that the automatic search/replace in the emacs buffer did not create in this code doubly-defined macros.

```
18 \def\mst@oti{OT1}\def\mst@ti{T1}\def\mst@lyi{LY1}
19 \def\mst@eui{EU1}\def\mst@euii{EU2}
20 \newif\ifmst@goahead
21 \newif\ifmst@abort
22 \newif\ifmst@optionalparam
```

`\mst@enc` Macros to store the font settings, each math version will have its own records.

`\mst@fam` 23 `\def\mst@enc{\encodingdefault}`

`\mst@ser`

`\mst@opsh`

`\mst@bold`

`\mst@ltsh`

```

24 \def\mst@fam{\familydefault}
25 \def\mst@ser{\seriesdefault}
26 \def\mst@opsh{\shapedefault} %% will be default shape for operator names
27 \def\mst@bold{\bfdefault}
28 \def\mst@ltsh{\shapedefault} %% will be default shape for letters

```

`\mst@greekfont` v1.15c: for use by the LGRgreek and selfGreek options. Defined as an `\edef` in order to be able to set-up once and for all the Greek at the time of `\usepackage`. Modifiable in the preamble via `\MTgreekfont{<font_name>}\Mathastext`.

```

29 \edef\mst@greekfont{\familydefault} %% v 1.15c

```

Package options 2011/03/09: v1.13 introduces the option LGRgreek and systematic use of `\if...` conditionals, for better readability (by myself) of the code.

```

30 \newif\ifmst@italic
31 \newif\ifmst@frenchmath
32 \DeclareOption{italic}{\mst@italictrue
33 \def\mst@ltsh{\itdefault}}
34 \DeclareOption{frenchmath}{\mst@frenchmathtrue\mst@italictrue
35 \def\mst@ltsh{\itdefault}}
36 %%
37 \newif\ifmst@endash\mst@endashtrue
38 \DeclareOption{endash}{\mst@endashtrue}
39 \DeclareOption{noendash}{\mst@endashfalse}
40 \newif\ifmst@emdash
41 \DeclareOption{emdash}{\mst@emdashtrue\mst@endashfalse}
42 %%
43 \newif\ifmst@alldelims
44 \edef\mst@tmp{\encodingdefault}\ifx\mst@oti\mst@tmp\else\mst@alldelimstrue\fi
45 \DeclareOption{alldelims}{\mst@alldelimstrue}
46 \DeclareOption{nolessnomore}{\mst@alldelimsfalse}
47 %% new with 1.2
48 \newif\ifmst@nosmalldelims
49 \DeclareOption{nosmalldelims}{\mst@nosmalldelimstrue}
50 %%
51 \newif\ifmst@noplus
52 \DeclareOption{noplus}{\mst@noplustrue}
53 \newif\ifmst@nominus
54 \DeclareOption{nominus}{\mst@nominustrue}
55 \DeclareOption{noplusnominus}{\ExecuteOptions{noplus,nominus}}
56 %%
57 \newif\ifmst@noparen
58 \DeclareOption{noparenthesis}{\mst@noparenttrue}
59 \newif\ifmst@nopunct
60 \DeclareOption{nopunctuation}{\mst@nopuncttrue}
61 \newif\ifmst@noequal
62 \DeclareOption{noequal}{\mst@noequaltrue}
63 \newif\ifmst@noexclam
64 \DeclareOption{noexclam}{\mst@noexclamtrue}

```

```

65 \newif\ifmst@noast
66   \DeclareOption{noasterisk}{\mst@noasttrue}
67 \newif\ifmst@nospecials
68   \DeclareOption{nospecials}{\mst@nospecialstrue}
69 \DeclareOption{basic}{\ExecuteOptions{noparenthesis,nopunctuation,%
70 noplusnominus,noequal,noexclam,noasterisk,nospecials,nolessnomore}}
71 %%
72 \newif\ifmst@nohbar
73   \DeclareOption{nohbar}{\mst@nohbartrue}
74 \newif\ifmst@nodigits
75   \DeclareOption{nodigits}{\mst@nodigitstrue}
76 \newif\ifmst@defaultimath
77   \DeclareOption{defaultimath}{\mst@defaultimathtrue}
78 \newif\ifmst@mathaccents
79   \DeclareOption{mathaccents}{\mst@mathaccentstrue}
80 %%
81 \newif\ifmst@needsymbol
82 \newif\ifmst@symboldelimiters
83   \DeclareOption{symboldelimiters}{\mst@needsymboltrue\mst@symboldelimiterstrue}
84 \newif\ifmst@symboldigits
85   \DeclareOption{symboldigits}{\mst@needsymboltrue\mst@symboldigitstrue}
86 \newif\ifmst@symbolgreek
87   \DeclareOption{symbolgreek}{\mst@needsymboltrue\mst@symbolgreektrue}
88 \newif\ifmst@symbolre
89   \DeclareOption{symbolre}{\mst@needsymboltrue\mst@symbolretrue}
90 \newif\ifmst@symbolmisc
91   \DeclareOption{symbolmisc}{\mst@needsymboltrue\mst@symbolmisctrue}
92 \DeclareOption{symbol}{\ExecuteOptions{symbolgreek,symbolmisc,symbolre}}
93 \DeclareOption{symbolmax}{\ExecuteOptions{symbol,symboldelimiters}}
94 %%
95 \newif\ifmst@needeuler
96 \newif\ifmst@eulerdigits
97   \DeclareOption{eulerdigits}{\mst@needeulertrue\mst@eulerdigitstrue}
98 \newif\ifmst@eulergreek
99   \DeclareOption{eulergreek}{\mst@needeulertrue\mst@eulergreektrue}
100 %%
101 \newif\ifmst@selfGreek
102   \DeclareOption{selfGreek}{\mst@selfGreekttrue}
103 \newif\ifmst@selfGreeks
104   \DeclareOption{selfGreeks}{\mst@selfGreekttrue\mst@selfGreekttrue}
105 \newif\ifmst@LGRgreek
106   \DeclareOption{LGRgreek}{\mst@LGRgreektrue}
107 \newif\ifmst@LGRgreeks
108   \DeclareOption{LGRgreeks}{\mst@LGRgreektrue\mst@LGRgreektrue}
109 %%
110 \def\mst@greek@select{0}
111 \newif\ifmst@itgreek
112 \newif\ifmst@upgreek
113   \DeclareOption{itgreek}{\mst@itgreektrue}

```

```

114 \DeclareOption{upgreek}{\mst@upgreektrue}
115 \DeclareOption{itGreek}{\def\mst@greek@select{1}}
116 \DeclareOption{upGreek}{\def\mst@greek@select{2}}
117 %%

```

Starting with 1.15f the meaning of the ‘defaultxx’ options has changed. They now prevent `mathastext` from defining additional alphabets rather than prevent it from identifying the ‘mathxx’ with the new ‘Mathxx’. The ‘Mathnormal’ and ‘Mathrm’ alphabet commands are always created as they are `SymbolFontAlphabets`, so cost-less in terms of math groups (once the associated symbol fonts are declared).

```

118 \newif\ifmst@defaultnormal
119 \DeclareOption{defaultnormal}{\mst@defaultnormaltrue}
120 \newif\ifmst@defaulttrm
121 \DeclareOption{defaulttrm}{\mst@defaulttrmtrue}
122 \newif\ifmst@defaultbf
123 \DeclareOption{defaultbf}{\mst@defaultbftrue}
124 \newif\ifmst@defaultit
125 \DeclareOption{defaultit}{\mst@defaultittrue}
126 \newif\ifmst@defaultsf
127 \DeclareOption{defaultsf}{\mst@defaultsftrue}
128 \newif\ifmst@defaultttt
129 \DeclareOption{defaultttt}{\mst@defaultttttrue}
130 \newif\ifmst@nonnormalbold
131 \DeclareOption{defaultalphabets}{\ExecuteOptions{defaultnormal,defaulttrm,%
132 defaultbf,defaultit,defaultsf,defaultttt}\mst@nonnormalboldtrue}

```

`mathastext` considers the default script and especially `scriptscript` sizes to be far too small, and it will modify them. An option maintains the default.

```

133 \newif\ifmst@defaultsizes
134 \DeclareOption{defaultmathsizes}{\mst@defaultsizestrue}
135 \newif\ifmst@twelve
136 \DeclareOption{12pt}{\mst@twelvetrue}
137 \newif\ifmst@fouriervec
138 \DeclareOption{fouriervec}{\mst@fouriervectrue}

```

v1.15: the subdued option.

```

139 \newif\ifmst@subdued
140 \DeclareOption{subdued}{\mst@subduedtrue}
141 \DeclareOption*{\PackageWarning{mathastext}{Unknown option ‘\CurrentOption’}}

142 \ProcessOptions\relax

```

<code>\exists</code> <code>\mst@exists@skip</code> <code>\forall</code> <code>\mst@forall@skip</code> <code>,</code> <code>\mst@prime@skip</code> <code>active@math@prime</code>	v1.15e [2012/10/21]: <code>math skip/glue</code> <i>after</i> <code>\exists</code> and <code>\forall</code> , this is useful when using upright letters in math mode. Each math version has its own user defined skips (redefinitions of \exists and \forall at the end of the code). v1.2 [2012/12/17]: <code>math skip/glue</code> <i>before</i> the <code>\prime</code> glyph. This is useful with the default CM glyph and upright letters (in contrast the prime from <code>txfonts</code> works fine with upright letters). For this we replace <code>\active@math@prime</code> with a skip-enhanced version.
--	--

The subdued and italic options set to zero the defined default skips in the normal and bold math versions. With v1.2 the skips can now be modified on the fly in the document, and are not only set in the preamble once and for all for each math version.

```

143 \newmuskip\mst@exists@muskip %% v 1.15e
144 \newmuskip\mst@forall@muskip
145 \def\mst@exists@skip{1mu}
146 \def\mst@forall@skip{.6667mu}
147 \newmuskip\mst@prime@muskip %% v 1.2
148 \def\mst@prime@skip{.5mu}
149 \def\mst@active@math@prime{^{\bgroup\mskip\mst@prime@muskip\prim@s}
150 {\catcode'\'= \active \global\let'\mst@active@math@prime}
151 \ifmst@italic
152 \ifmst@frenchmath\else
153 \def\mst@exists@skip{0mu}\def\mst@forall@skip{0mu}\def\mst@prime@skip{0mu}
154 \fi\fi

```

`\MTexistsskip` v1.15e: These macros allow to put some amount of mu skip or glue after `\exists` or `\forall`, on a math version basis [the normal and bold math versions inherit the same skips; these skips are set to zero in case of the subdued, or the italic option]. The user must follow these macros with a `\Mathastext` command (optionally with the intended math version name).

v1.2: `\MTprimeskip` added and the silly `\@onlypreamble` are removed and the macros are modified to have immediate effect in the document, independently of their use in the preamble to store values for the math versions.

```

155 \newcommand*\MTexistsskip[1]{\edef\mst@exists@skip{#1}%
156 \expandafter\mst@exists@muskip\mst@exists@skip\relax}
157 \newcommand*\MTforallskip[1]{\edef\mst@forall@skip{#1}%
158 \expandafter\mst@forall@muskip\mst@forall@skip\relax}
159 \newcommand*\MTprimeskip[1]{\edef\mst@prime@skip{#1}%
160 \expandafter\mst@prime@muskip\mst@prime@skip\relax}
161 \let\Mathastextexistsskip\MTexistsskip
162 \let\Mathastextforallskip\MTforallskip
163 \let\Mathastextprimeskip\MTprimeskip
164 \let\mathastextexistsskip\MTexistsskip
165 \let\mathastextforallskip\MTforallskip
166 \let\mathastextprimeskip\MTprimeskip

```

`\mst@activatelist` v1.2 does some rather daring activation of `!, ?, +, -, =, <, >, (,), [,], |` in math mode to achieve something I wanted to do since a long time: overcome the frustration resulting from the mutually excluding relation between the variable-family concept and the automatic spacing concept. After loading `mathastext`, these characters now obey the math alphabets commands but still have the automatic spacing. The use as delimiters for those concerned is also ok. The mechanism is off by default for `\{` and `\}` as this is not compatible with their use as delimiters (`\lbrace` and `\rbrace` should then be used instead) but can be activated.

```

167 \newtoks\mst@activatelist
168 \newcommand\nonlettersdonotobeymathalphabets{\let\mst@the\@gobble}
169 \newcommand\nonlettersobeymathalphabets{\let\mst@the\the}
170 \nonlettersobeymathalphabets
171 \ifmst@subdued\nonlettersdonotobeymathalphabets\fi
172 \AtBeginDocument{
173 \everymath\expandafter{\the\everymath \mst@the\mst@activatelist}
174 \everydisplay\expandafter{\the\everydisplay \mst@the\mst@activatelist}}
175 \def\mst@activate#1#2#3{
176 \begingroup
177 \lccode'\~='#1\relax\lowercase{\endgroup\mathcode'\#1="8000\def~{#2#3}}
178 \def\mst@addtoactivate#1#2#3{
179 \mst@activatelist\expandafter{\the\mst@activatelist\mst@activate#1#2#3}}

```

`\newmcodes@` 1.15d: this amsmath macro causes an error in Unicode engines as soon someone assigns a Unicode mathcode to the minus sign, and then makes a `\DeclareMathOperator` declaration. Furthermore it hard-codes the font family 0 as being the one to be used. Moreover just putting the concerned signs `-,;,...` inside braces emulates enough the behavior (although the tick will give a prime).

```

180 \ifpackageloaded{amsmath}
181 {\let\newmcodes@\relax} % brutal, but bye bye and don't come back.
182 {}

```

`subdued` v1.15: The subdued code was initiated in May 2011. I returned to `mathastext` on the fateful day Sep 24, 2012, and decided to complete what I had started then, in the mean time I had forgotten almost all I knew about L^AT_EX macro programming.

This is only the first half of the subdued code, the second part (to activate it) is near the end of the package.

The point was to extract the data about how are ‘letters’ and ‘operators’ in the normal and bold versions, through obtaining the math families of ‘a’ and ‘1’, respectively¹. Due to the reassignments done for characters by `mathastext` I also had decided in 2011 that the OT1 encoding, if detected, should be replaced by T1 ((1): but the *euler* package for example assigns the digits to the *letters* symbol font...)

v1.15d: Oct 13, 2012. The `\mathcode` thing has to be used with care under Unicode engines. Unfortunately the `\luatexUmathcode` macro is helpless [update: I have since been told by TH that the next LuaLaTeX release will change this] as it is not possible to know if it will return a legacy mathcode or a Unicode mathcode. On the other hand the much saner `\XeTeXmathcodenum` always return a Unicode mathcode. All these complications are because we do not know what other packages did before with letters and digits. I just can not assume that they only modified math fonts number 0 and 1, they could do as `mathastext` does, define new math fonts. Of course it is assumed here that all digits are assigned to one and the same font, and same for letters.

v1.15e: Oct 22, 2012. Based on a better understanding of the LaTeX2e internals, I have tremendously simplified the code and can now avoid entirely the LuaLaTeX

problems [but see below, I completely forgot what I was saying in the previous paragraph about families 0 and 1...]. Moreover, I add the necessary things to also subdue the `\mathbf`, `\mathit`, `\mathsf` and `\mathtt` macros (previous version only took care of the symbol alphabets `\mathnormal` and `\mathrm`.) [update: v1.15f does that in a completely different and much simpler way] Notice that the package defines a `\mathnormalbold` macro, but it will not be subdued in the normal and bold math versions.

v1.15f: Oct 23, 2012. What did I have for lunch yesterday? first, my code is indeed simpler, but it does not accomplish quite the same thing. The previous code queried the math family of a, respectively 1, to guess and then extract the fonts to be reassigned to `mtletterfont` and `mtoperatorfont` (which is done at the end of this .sty file). The present code simply directly uses letters and operators (so `mathastext` could not subdue itself... if it was somehow cloned), but obtains indeed the corresponding font specifications in normal and bold in a cleaner manner. But it is so much shorter (and avoids the Lua_{TEX} problem with `\luatexUmathcode`). Anyhow, for example the euler package puts the digits in the letters math family! so the previous method was also error prone. In fact there is no way to do this subdued mechanism on the basis of the legacy code of `mathastext`. The only way is to rewrite entirely the package to query all mathcodes of things it changes in order to be able to revert these changes (and one would have to do even more hacking for `\mathversion{normal}` and not only `\MTversion{normal}` to work).

v1.15f: and also I take this opportunity to do the subdued math alphabets things in a much much easier way, see below.

```

183 \ifmst@subdued
184 \def\mst@reserved#1\getanddefine@fonts\symletters#2#3\@nil{%
185 \def\mst@normalmv@letter{#2}}
186 \expandafter\mst@reserved\mv@normal\@nil
187 \def\mst@reserved#1\getanddefine@fonts\symletters#2#3\@nil{%
188 \def\mst@boldmv@letter{#2}}
189 \expandafter\mst@reserved\mv@bold\@nil
190 \def\mst@reserved#1\getanddefine@fonts\symoperators#2#3\@nil{%
191 \def\mst@normalmv@operator{#2}}
192 \expandafter\mst@reserved\mv@normal\@nil
193 \def\mst@reserved#1\getanddefine@fonts\symoperators#2#3\@nil{%
194 \def\mst@boldmv@operator{#2}}
195 \expandafter\mst@reserved\mv@bold\@nil
196 %%
197 \edef\mst@tmp{\encodingdefault}
198 \def\mst@reserved#1/#2/#3/#4/{\gdef\mst@debut{#1}\gdef\mst@reste{#2/#3/#4}}
199 \begingroup\escapechar\m@ne
200 \xdef\mst@funnyoti{\expandafter\string\csname OT1\endcsname}
201 \expandafter\expandafter\expandafter
202 \mst@reserved\expandafter\string\mst@normalmv@operator/
203 \endgroup
204 \ifx\mst@debut\mst@funnyoti\ifx\mst@tmp\mst@oti\def\mst@tmp{T1}\fi\fi
205 \edef\mst@normalmv@operator{\expandafter\noexpand\csname \mst@tmp/\mst@reste\endcsname}

```

```

206 \begingroup\escapechar\m@ne
207 \expandafter\expandafter\expandafter
208 \mst@reserved\expandafter\string\mst@boldmv@operator/
209 \endgroup
210 \ifx\mst@debut\mst@funnyoti\ifx\mst@tmp\mst@oti\def\mst@tmp{T1}\fi\fi
211 \edef\mst@boldmv@operator{\expandafter\noexpand\csname \mst@tmp/\mst@reste\endcsname}
212 \fi % fin de ce \ifmst@subdued

```

In the short-lived 1.15e I was doing the following for alphabets:

```

\def\mst@reservedc#1#2#3#4{\def\mst@normalmv@mathbf{#4#3}}
\def\mst@reserveda#1{%
\def\mst@reservedb##1\install@mathalphabet#1##2##3\@nil{\mst@reservedc##2}%
\expandafter\mst@reservedb\mv@normal\@nil}
\expandafter\mst@reserveda\csname mathbf\space\endcsname

```

and later in the code:

```

\expandafter\expandafter\expandafter\SetMathAlphabet@
\expandafter\expandafter\expandafter\mv@normal
\expandafter\mst@normalmv@mathbf\csname Mathbf\space \endcsname\Mathbf

```

It does work! but `\let\mst@original@bf\mathbf` is so much simpler. And also safer, because `\mathbf` could have been redefined using `\DeclareSymbolFontAlphabet...` (I could have provided the necessary check to the already bloated code...)

mtoperatorfont Declaration of the current default font as our math font. The characteristics of the used font can be changed by a user call to the macros `\Mathastext` or `\Mathas-textwilluse`, which will be defined next. We will also make one internal call to `\Mathastext` to set up the normal and bold math versions, so we will also employ `\SetSymbolFont` later.

```

213 \DeclareSymbolFont{mtoperatorfont}
214     {\mst@enc}{\mst@fam}{\mst@ser}{\mst@opsh}

```

\operator@font We modify this L^AT_EX internal variable in order for the predefined `\cos`, `\sin`, etc. . . to be typeset with the `mathastext` font. This will also work for things declared through the `amsmath` package command `\DeclareMathOperator`. The alternative would have been to redefine the ‘operators’ Math Symbol Font. Obviously people who expect that `\operator@font` will always refer to the ‘operators’ math font might be in for a surprise. . . well, we’ll see.

\operatornames- v1.2: rather than just replacing `\symoperators` by `\symmtoperatorfont` I add
obeymathalphabets a modification which makes the declared operator names sensitive to the math
\operatornames- alphabets... ouh le vilain!
donot- 215 \newcommand{\operatornamesobeymathalphabets}
obeymathalphabets 216 {\def\operator@font{\mathgroup\ifnum\fam=-\@ne\symmtoperatorfont\else\fam\fi}}
217 \newcommand{\operatornamesdonotobeymathalphabets}
218 {\def\operator@font{\mathgroup\symmtoperatorfont}}
219 \operatornamesobeymathalphabets
220 \ifmst@subdued\operatornamesdonotobeymathalphabets\fi

`mtletterfont` In version 1.1, we add the possibility to mimick the standard behavior, that is to have italic letters and upright digits. Thanks to Tariq PERWEZ and Kevin KLEMENT who asked for such a feature.

```

221 \DeclareSymbolFont{mtletterfont}
222     {\mst@enc}{\mst@fam}{\mst@ser}{\mst@ltsh}

```

`\Mathnormal` We redefine the default normal, rm, bf, it, sf, and tt alphabets, but this will be done via `\renewcommand{\mathrm}{\Mathrm}` etc. . . and (1.15f) the previous status of `\Mathbf` the math alphabets is recorded for the sake of the `subdued` option.

`\Mathit` We follow the standard L^AT_EX behavior for `\mathbf`, which is to pick up the bold series of the roman font (digits and operator names).

`\Mathsf` We will access (if no option is passed for Greek) the `\omicron` via `\mathnormal`.

`\mathnormalbold` But unfortunately the `fourier` package with the upright option does not have an upright omicron obtainable by simply typing `\mathnormal{o}`. So if `fourier` is loaded we use `\mathrm` and not `\mathnormal`.

1.15f (2012/10/24): I should have tested here for the ‘defaultxx’ options and then avoid declaring the corresponding ‘Mathxx’ alphabet. In this way, the ‘defaultxx’ option can be tried by the user if the presence of other packages results in some ‘too many math alphabets’ error. On the other hand the previous method allowed to have both `\Mathbf` and `\mathbf` at one’s disposal. But I never used it, and the `subdued` option will probably serve in cases one would have found some utility in this possibility.

```

223 \let\mst@alph@omicron\mathnormal
224 \ifpackageloaded{fourier}{\ifsloped\else\let\mst@alph@omicron\mathrm\fi}{\fi}
225 \DeclareSymbolFontAlphabet{\Mathnormal}{mtletterfont}
226 \DeclareSymbolFontAlphabet{\Mathrm}{moperatorfont}
227 \ifmst@nonnormalbold\else
228     \DeclareMathAlphabet{\mathnormalbold}{\mst@enc}{\mst@fam}{\mst@bold}{\mst@ltsh}
229 \fi\ifmst@defaultbf\else
230     \DeclareMathAlphabet{\Mathbf}{\mst@enc}{\mst@fam}{\mst@bold}{\mst@opsh}
231 \fi\ifmst@defaultit\else
232     \DeclareMathAlphabet{\Mathit}{\mst@enc}{\mst@fam}{\mst@ser}{\itdefault}
233 \fi\ifmst@defaultsf\else
234     \DeclareMathAlphabet{\Mathsf}{\mst@enc}{\sfdefault}{\mst@ser}{\mst@opsh}
235 \fi\ifmst@defaulttt\else
236     \DeclareMathAlphabet{\Mathtt}{\mst@enc}{\ttdefault}{\mst@ser}{\mst@opsh}
237 \fi
238 \let\mst@original@normal\mathnormal
239 \let\mst@original@rm\mathrm
240 \let\mst@original@bf\mathbf
241 \let\mst@original@it\mathit
242 \let\mst@original@sf\mathsf
243 \let\mst@original@tt\mathtt
244 \def\mst@restorealphabets{% for subdued
245 \let\mathnormal\mst@original@normal
246 \let\mathrm\mst@original@rm

```

```

247 \let\mathbf\mst@original@bf
248 \let\mathit\mst@original@it
249 \let\mathsf\mst@original@sf
250 \let\mathtt\mst@original@tt}
251 \def\mst@setalphabets{%
252 \ifmst@defaultnormal\else\renewcommand{\mathnormal}{\Mathnormal}\fi
253 \ifmst@defaulttrm\else\renewcommand{\mathrm}{\Mathrm}\fi
254 \ifmst@defaultbf\else\renewcommand{\mathbf}{\Mathbf}\fi
255 \ifmst@defaultit\else\renewcommand{\mathit}{\Mathit}\fi
256 \ifmst@defaultsf\else\renewcommand{\mathsf}{\Mathsf}\fi
257 \ifmst@defaulttt\else\renewcommand{\mathtt}{\Mathtt}\fi}
258 \ifmst@subdued\else\mst@setalphabets\fi

```

LGRgreek v1.14b: We can not move the `\DeclareSymbolFont` to the `\Mathastext` macro because it resets the font family in **all** math versions, and some could have been defined by the user with previous calls to `\Mathastext`. So we have to have them here. The problem is that at this stage it is impossible to know if we really need (in the case of LGRgreek) two separate shapes for upper and lowercase, and (in the case of selfGreek) a shape distinct from the one used in `mtoperatorfont`. So I opted in the end for declaring possibly one too many font. To achieve more economy the only way would be to keep cumulative track of all previously declared math versions and to redeclare appropriately the LGR or self greek fonts at each call to `\Mathastext` (with no optional argument): a bit painful, and as I am possibly the sole user in the world of this possibility of multiple math versions with this package. Also the advantage to systematically allocate a font for the selfGreek option is that we can force the use of the OT1 encoding.

First we establish the cumulative effect of the greek related options.

v1.15c introduces some possibilities to change the shapes of Greek letters in each math versions, and even the Greek font (in LGR encoding). The commands `\MTitgreek` etc... will be used in-between calls to `\Mathastext` and re-adjust the shapes. And the command `\MTgreekfont` changes the Greek font family.

```

259 \def\mst@update@greeksh{
260   \def\mst@greek@lsh{\mst@ltsh} %% default behavior
261   \def\mst@greek@ush{\mst@opsh}
262   \ifmst@itgreek\def\mst@greek@lsh{\itdefault}
263   \def\mst@greek@ush{\itdefault}\fi
264   \ifmst@upgreek\def\mst@greek@lsh{\updefault}
265   \def\mst@greek@ush{\updefault}\fi
266   \ifmst@frenchmath
267     \ifmst@itgreek\else
268     \ifmst@upgreek\else
269       \def\mst@greek@lsh{\mst@opsh}
270       \def\mst@greek@ush{\mst@opsh}
271     \fi\fi
272   \fi
273   \ifcase\mst@greek@select
274     \or\def\mst@greek@ush{\itdefault}

```

```

275         \or\def\mst@greek@ush{\updefault}
276     \fi}
277 \mst@update@greeksh
278 \ifmst@LGRgreek
279     \DeclareFontEncoding{LGR}{\}{}
280     \DeclareSymbolFont{mtlgrfontlower}{LGR}
281         {\mst@fam}{\mst@ser}{\mst@greek@lsh}
282     \DeclareSymbolFont{mtlgrfontupper}{LGR}
283         {\mst@fam}{\mst@ser}{\mst@greek@ush}
284 \else
285 \ifmst@selfGreek
286     \DeclareSymbolFont{mtselfGreekfont}{OT1}
287         {\mst@fam}{\mst@ser}{\mst@greek@ush}
288 \fi\fi

```

```

mteulervm In case we need the Euler font, we declare it here. It will use uzeur.fd from the
\MathEuler eulervm package of Walter SCHMIDT
\MathEulerBold
289 \ifmst@needeuler
290 \DeclareSymbolFont{mteulervm}{U}{zeur}{m}{n}
291 \DeclareSymbolFontAlphabet{\MathEuler}{mteulervm}
292 \DeclareMathAlphabet{\MathEulerBold}{U}{zeur}{\mst@bold}{n}
293 \fi
294 \newcommand\MTEulerScale[1]{\edef\zeu@Scale{#1}}
295 \let\MathastextEulerScale\MTEulerScale

```

L^AT_EX 2_ε has a strange initial configuration where the capital Greek letters are of type `mathalpha`, but the lower Greek letters of type `mathord`, so that `\mathbf` does not act on them, although lowercase Greek letters and Latin letters are from the same font. This is because `\mathbf` is set up to be like a bold version of `\mathrm`, and `\mathrm` uses the ‘operators’ font, by default `cmr`, where there are NO lowercase greek letters. This set-up is ok for the Capital Greek letters which are together with the Latin letters in both `cmmi` and `cmr`.

The package `eulervm` sets the lowercase Greek letters to be of type `mathalpha`, the default `\mathbf` and `\mathrm` will act wierdly on them, but a `\mathbfbold` is defined which will use the bold series of the Euler roman font, it gives something coherent for Latin and Greek *lowercase* letters, and this is possible because the same font contains upright forms for them all.

Here in `mathastext`, Latin letters and Greek letters (lower and upper case) must be (generally) assumed to come from two different fonts, as a result the standard `\mathbf` (and `\mathrm`) will give weird results when used for Greek letters. It would be tricky but not impossible to coerce `\mathbf` to do something reasonable. I posted the method I have in mind to the texhax mailing list (<http://tug.org/pipermail/texhax/2011-January/016605.html>) but at this time 30-01-2011 09:42:27 CET I decided I would not try to implement it here. I prefer to respect the default things.

I followed the simpler idea of the `eulervm` package and defined `\MathEuler` and `\MathEulerBold` alphabet commands (the `eulervm` package does this only for the

bold font).

`mtpsymbol` In case we need the Symbol font, we declare it here. The macro `\psy@scale` will
`\MathPSymbol` be used to scale the font (see at the very end of this file).

```

296 \ifmst@needsymbol
297 \def\psy@scale{1}
298 \DeclareSymbolFont{mtpsymbol}{U}{psy}{m}{n}
299 \DeclareSymbolFontAlphabet{\MathPSymbol}{mtpsymbol}
300 \fi
301 \newcommand\MTSymbolScale[1]{\edef\psy@scale{#1}}
302 \let\MathastextSymbolScale\MTSymbolScale

```

I did not choose the name `\MathSymbol` as this name may be defined somewhere for another thing. There is no bold for the postscript Symbol font distributed with the $\text{\LaTeX} 2_{\epsilon}$ `psnffs` core package.

`\pmvec` Definition of a poor man version of the `\vec` accent

```
303 \DeclareRobustCommand\pmvec[1]{\mathord{\stackrel{\scriptstyle\pm}{\rightarrow}}}
304 {\tiny\boldmath$\mathord{\rightarrow}$}}{\tiny\boldmath$\mathord{\rightarrow}$}}
```

`\fouriervec` The glyph is taken from the Fourier font of Michel BOVANI. Note: (oct 2012) I should not allocate an entire symbol font just for one glyph! But I have not given any serious thought to what one can do to simulate a math accent without doing such a wasteful thing.

```

305 \ifmst@fouriervec
306 \DeclareFontEncoding{FML}{-}{-}
307 \DeclareFontSubstitution{FML}{-}{futm}{m}{it}
308 \DeclareSymbolFont{mtfourierpourcec}{FML}{futm}{m}{it}
309 \SetSymbolFont{mtfourierpourcec}{bold}{FML}{futm}{b}{it}
310 \DeclareMathAccent{\fouriervec}{\mathord}{mtfourierpourcec}{"7E}
311 \fi

```

<code>\MTencoding</code>	Some public macros to modify our private internals, and we will use them also
<code>\MTfamily</code>	ourselves.

In version 1.1 we add the possibility to have two distinct font shapes for letters and digits. So in fact we could as well have two really unrelated fonts but this is really not the spirit of the package.

`\MTlettershape` Note that using these macros in the preamble allows `\Mathastext` to set up math versions with a given font for math mode, and at the same time not modifying the `\familydefault` or `\romandefault` etc...

```

312 \newcommand*\MTencoding[1]{\def\mst@enc{#1}}
313 \newcommand*\MTfamily[1]{\def\mst@fam{#1}}
314 \newcommand*\MTseries[1]{\def\mst@ser{#1}}
315 \newcommand*\MTshape[1]{\def\mst@opsh{#1}
316   \ifmst@italic\else\def\mst@ltsh{#1}\fi}
317 \newcommand*\MTboldvariant[1]{\def\mst@bold{#1}}
318 \newcommand*\MTlettershape[1]{\def\mst@ltsh{#1}}

```

```

319 \@onlypreamble\MTencoding
320 \@onlypreamble\MTfamily
321 \@onlypreamble\MTseries
322 \@onlypreamble\MTshape
323 \@onlypreamble\MTboldvariant
324 \@onlypreamble\MTlettershape
325 \let\Mathastextencoding\MTencoding
326 \let\Mathastextfamily\MTfamily
327 \let\Mathastextseries\MTseries
328 \let\Mathastextshape\MTshape
329 \let\Mathastextboldvariant\MTboldvariant
330 \let\Mathastextlettershape\MTlettershape

\MTitgreek v1.15c: These new macros can be used in-between calls to \Mathastext. They reset
\MTupgreek the shapes for Greek letters (applies to LGRgreek(s) and selfGreek(s) options). The
\MTitGreek \MTgreekfont presupposes either LGRgreek or selfGreek. \MTgreekfont{\familydefault}
\MTupGreek acts like turning on LGRgreek(s) or selfGreek(s).

\MTgreekfont 331 \newcommand\MTitgreek{%
332 \mst@itgreektrue\mst@upgreekfalse\def\mst@greek@select{0}}
333 \newcommand\MTupgreek{%
334 \mst@upgreektrue\mst@itgreekfalse\def\mst@greek@select{0}}
335 \newcommand\MTitGreek{\def\mst@greek@select{1}}
336 \newcommand\MTupGreek{\def\mst@greek@select{2}}
337 \@onlypreamble\MTitgreek
338 \@onlypreamble\MTupgreek
339 \@onlypreamble\MTitGreek
340 \@onlypreamble\MTitGreek
341 \let\Mathastextitgreek\MTitgreek
342 \let\Mathastextupgreek\MTupgreek
343 \let\MathastextitGreek\MTitGreek
344 \let\MathastextupGreek\MTupGreek
345 \newcommand*\MTgreekfont[1]{\def\mst@greekfont{#1}}
346 \@onlypreamble\MTgreekfont
347 \let\Mathastextgreekfont\MTgreekfont

\MTWillUse This is a preamble-only command, which can be used more than once, only the
latest one counts. Sets up the math fonts in the normal and bold versions, as does
\Mathastext.
348 \newcommand*\MTWillUse[5][\@empty]{
349 \MTencoding{#2}
350 \MTfamily{#3}
351 \MTseries{#4}
352 \MTshape{#5}
353 \ifmst@italic\MTlettershape{\itdefault}\fi % was missing in v 1.14 and prior
354 \ifx\@empty#1
355 \else
356 %% we check if optional argument was [], this does not detect [ ]
357 \def\mst@tmp{#1}

```

```

358 \ifx\@empty\mst@tmp\else\MTlettershape{#1}\fi
359 \fi
360 \Mathastext}
361 \@onlypreamble\MTWillUse
362 \let\MathastextWillUse\MTWillUse
363 \let\Mathastextwilluse\MTWillUse

```

\Mathastext The command **\Mathastext** can be used anywhere in the preamble and any number of time, the last one is the one that counts.

In version 1.1 we have two fonts: they only differ in shape. The **mtletterfont** is for letters, and the **mtoperatorfont** for digits and log-like operator names. The default is that both are upright.

Starting with version 1.12, an optional argument makes **\Mathastext** act as the Declaration of a math version, to be later used in the document.

Versions 1.15x brought some adaptations related to the subdued option.

```

364 \newcommand*\Mathastext[1][\@empty]{
365 \ifx\@empty#1 % no optional argument
366 \mst@update@greeksh
367 \edef\mst@encoding@normal{\mst@enc}
368 \edef\mst@family@normal{\mst@fam}
369 \edef\mst@series@normal{\mst@ser}
370 \edef\mst@shape@normal{\mst@opsh}
371 \edef\mst@ltshape@normal{\mst@ltsh}
372 \edef\mst@itdefault@normal{\itdefault}
373 \edef\mst@rmdefault@normal{\rmdefault}
374 \edef\mst@sfdefault@normal{\sfdefault}
375 \edef\mst@ttdefault@normal{\ttdefault}
376 \edef\mst@boldvariant@normal{\mst@bold}
377 \edef\mst@exists@skip@normal{\mst@exists@skip}
378 \edef\mst@forall@skip@normal{\mst@forall@skip}
379 \edef\mst@prime@skip@normal{\mst@prime@skip}
380 \edef\mst@encoding@bold{\mst@enc}
381 \edef\mst@family@bold{\mst@fam}
382 \edef\mst@series@bold{\mst@bold}
383 \edef\mst@shape@bold{\mst@opsh}
384 \edef\mst@ltshape@bold{\mst@ltsh}
385 \edef\mst@boldvariant@bold{\mst@bold}
386 \edef\mst@itdefault@bold{\itdefault}
387 \edef\mst@rmdefault@bold{\rmdefault}
388 \edef\mst@sfdefault@bold{\sfdefault}
389 \edef\mst@ttdefault@bold{\ttdefault}
390 \edef\mst@exists@skip@bold{\mst@exists@skip}
391 \edef\mst@forall@skip@bold{\mst@forall@skip}
392 \edef\mst@prime@skip@bold{\mst@prime@skip}
393 \ifmst@subdued
394 \edef\mst@exists@skip@normal{0mu}
395 \edef\mst@forall@skip@normal{0mu}
396 \edef\mst@prime@skip@normal{0mu}

```

```

397 \edef\mst@exists@skip@bold{0mu}
398 \edef\mst@forall@skip@bold{0mu}
399 \edef\mst@prime@skip@bold{0mu}
400 \else
401 \ifmst@italic
402 \ifmst@frenchmath
403     \expandafter\mst@exists@muskip\mst@exists@skip\relax
404     \expandafter\mst@forall@muskip\mst@forall@skip\relax
405     \expandafter\mst@prime@muskip\mst@prime@skip\relax
406 \else
407     \edef\mst@exists@skip@normal{0mu}
408     \edef\mst@forall@skip@normal{0mu}
409     \edef\mst@prime@skip@normal{0mu}
410     \edef\mst@exists@skip@bold{0mu}
411     \edef\mst@forall@skip@bold{0mu}
412     \edef\mst@prime@skip@bold{0mu}
413 \fi\else
414     \expandafter\mst@exists@muskip\mst@exists@skip\relax
415     \expandafter\mst@forall@muskip\mst@forall@skip\relax
416     \expandafter\mst@prime@muskip\mst@prime@skip\relax
417 \fi\fi
418 %% v1.15f
419 \ifmst@nonormalbold\else
420     \SetMathAlphabet{\mathnormalbold}{normal}{\mst@encoding@normal}
421                                     {\mst@family@normal}
422                                     {\mst@boldvariant@normal}
423                                     {\mst@ltshape@normal}
424     \SetMathAlphabet{\mathnormalbold}{bold}{\mst@encoding@bold}
425                                     {\mst@family@bold}
426                                     {\mst@boldvariant@bold}
427                                     {\mst@ltshape@bold}
428 \fi
429 %% v1.15f adds \ifmst@default.. checks
430 \ifmst@subdued\else
431     \SetSymbolFont{mtletterfont}{normal}{\mst@encoding@normal}
432                                     {\mst@family@normal}
433                                     {\mst@series@normal}
434                                     {\mst@ltshape@normal}
435     \SetSymbolFont{mtletterfont}{bold}{\mst@encoding@bold}
436                                     {\mst@family@bold}
437                                     {\mst@series@bold}
438                                     {\mst@ltshape@bold}
439     \SetSymbolFont{mtooperatorfont}{normal}{\mst@encoding@normal}
440                                     {\mst@family@normal}
441                                     {\mst@series@normal}
442                                     {\mst@shape@normal}
443     \SetSymbolFont{mtooperatorfont}{bold}{\mst@encoding@bold}
444                                     {\mst@family@bold}
445                                     {\mst@series@bold}

```

```

446                                     {\mst@shape@bold}
447 \ifmst@defaultbf\else
448   \SetMathAlphabet{\Mathbf}{normal}{\mst@encoding@normal}
449                                     {\mst@family@normal}
450                                     {\mst@series@bold}
451                                     {\mst@shape@normal}
452   \SetMathAlphabet{\Mathbf}{bold}{\mst@encoding@bold}
453                                     {\mst@family@bold}
454                                     {\mst@series@bold}
455                                     {\mst@shape@bold}
456 \fi\ifmst@defaultit\else
457   \SetMathAlphabet{\Mathit}{normal}{\mst@encoding@normal}
458                                     {\mst@family@normal}
459                                     {\mst@series@normal}
460                                     {\mst@itdefault@normal}
461   \SetMathAlphabet{\Mathit}{bold}{\mst@encoding@bold}
462                                     {\mst@family@bold}
463                                     {\mst@series@bold}
464                                     {\mst@itdefault@bold}
465 \fi\ifmst@defaultsf\else
466   \SetMathAlphabet{\Mathsf}{normal}{\mst@encoding@normal}
467                                     {\mst@sfdefault@normal}
468                                     {\mst@series@normal}
469                                     {\mst@shape@normal}
470   \SetMathAlphabet{\Mathsf}{bold}{\mst@encoding@bold}
471                                     {\mst@sfdefault@bold}
472                                     {\mst@series@bold}
473                                     {\mst@shape@bold}
474 \fi\ifmst@defaultttt\else
475   \SetMathAlphabet{\Mathtt}{normal}{\mst@encoding@normal}
476                                     {\mst@ttdefault@normal}
477                                     {\mst@series@normal}
478                                     {\mst@shape@normal}
479   \SetMathAlphabet{\Mathtt}{bold}{\mst@encoding@bold}
480                                     {\mst@ttdefault@bold}
481                                     {\mst@series@bold}
482                                     {\mst@shape@bold}
483 \fi\fi % de \ifmst@subdued

```

`\MathEulerBold` v1.14c: We reset `mteulervm` and `\MathEulerBold` here as the variant for bold may have been changed by the user via `\Mathastextboldvariant{m}`; and we should keep this local to math versions.

```

484 \ifmst@needeuler
485   \SetSymbolFont{mteulervm}{bold}{U}{zeur}{\mst@boldvariant@normal}{n}
486   \SetMathAlphabet{\MathEulerBold}{normal}
487     {U}{zeur}{\mst@boldvariant@normal}{n}
488   \SetMathAlphabet{\MathEulerBold}{bold}
489     {U}{zeur}{\mst@boldvariant@normal}{n}
490 \fi

```



```

491 \ifmst@needsymbol\SetSymbolFont{mtpsymbol}{bold}
492           {U}{psy}{\mst@boldvariant@normal}{n}
493 \fi

```

LGRgreek* LGRgreek, LGRgreeks, selfGreek, and selfGreeks options.

```

selfGreek* 494 \ifmst@subdued\else
495 \ifmst@LGRgreek
496   \SetSymbolFont{mtlgrfontlower}{normal}{LGR}
497           {\mst@greekfont}{\mst@series@normal}{\mst@greek@lsh}
498   \SetSymbolFont{mtlgrfontlower}{bold}{LGR}
499           {\mst@greekfont}{\mst@boldvariant@normal}{\mst@greek@lsh}
500   \SetSymbolFont{mtlgrfontupper}{normal}{LGR}
501           {\mst@greekfont}{\mst@series@normal}{\mst@greek@ush}
502   \SetSymbolFont{mtlgrfontupper}{bold}{LGR}
503           {\mst@greekfont}{\mst@boldvariant@bold}{\mst@greek@ush}
504 \else
505 \ifmst@selfGreek
506   \SetSymbolFont{mtselfGreekfont}{normal}{OT1}
507           {\mst@greekfont}{\mst@series@normal}{\mst@greek@ush}
508   \SetSymbolFont{mtselfGreekfont}{bold}{OT1}
509           {\mst@greekfont}{\mst@boldvariant@bold}{\mst@greek@ush}
510 \fi\fi\fi

511 \ifmst@subdued
512 \typeout{** subdued mode will be activated for the normal and bold math versions}
513 \else
514 \typeout{** Latin letters in the normal (resp. bold) math versions are nowJ%
515   ** set up to use the fonts
516 \mst@encoding@normal/\mst@family@normal/\mst@series@normal%
517 (\mst@boldvariant@normal)/\mst@ltshape@normal}
518 \ifmst@LGRgreek\typeout{** Greek letters (\mst@greek@lsh/\mst@greek@ush)
519 will use LGR/\mst@greekfont}
520 \fi
521 \ifmst@nodigits\else\typeout{** Other characters (digits, ...)
522 and \protect\log-like names will beJ%
523 ** typeset with the \mst@shape@normal\space shape.}
524 \fi
525 \fi
526 \else % optional argument, then we rather do DeclareVersion
527 \edef\mst@tmp{#1}
528 \ifx\mst@tmp\@empty
529   \Mathastext % no infinite loop!
530 \else
531   \MTDeclareVersion[\mst@ltsh]{#1}
532   {\mst@enc}{\mst@fam}{\mst@ser}{\mst@opsh}
533 \fi
534 \fi
535 }
536 \@onlypreamble\Mathastext

```

537 \let\mathastext\Mathastext

\MTDeclareVersion The \MTDeclareVersion command is to be used in the preamble to declare a math version. A more complicated variant would also specify a choice of series for the Euler and Symbol font: anyhow Symbol only has the medium series, and Euler has medium and bold, so what is lacking is the possibility to create a version with a bold Euler. There is already one such version: the default bold one. And there is always the possibility to add to the preamble \SetSymbolFont{mteulervm}{versionname}{U}{zeur}{bx}{n} if one wants to have a math version with bold Euler characters.

For version 1.1 we add an optional parameter specifying the shape to be used for letters.

Note: [2010/10/24] I really should check whether the user attempts to redefine the ‘normal’ and ‘bold’ versions and issue a warning in that case!

```

538 \newcommand*{\MTDeclareVersion}[6] [\@empty]{
539   \edef\mst@version{#2}
540   \DeclareMathVersion{\mst@version}
541   \expandafter\edef\csname mst@encoding@\mst@version\endcsname{#3}
542   \expandafter\edef\csname mst@family@\mst@version\endcsname{#4}
543   \expandafter\edef\csname mst@series@\mst@version\endcsname{#5}
544   \expandafter\edef\csname mst@shape@\mst@version\endcsname{#6}
545   \expandafter\edef\csname mst@boldvariant@\mst@version\endcsname{\mst@bold}
546   \expandafter\edef\csname mst@itdefault@\mst@version\endcsname{\itdefault}
547   \expandafter\edef\csname mst@rmdefault@\mst@version\endcsname{\rmdefault}
548   \expandafter\edef\csname mst@sfdefault@\mst@version\endcsname{\sfdefault}
549   \expandafter\edef\csname mst@ttdefault@\mst@version\endcsname{\ttdefault}
550   \expandafter\edef\csname mst@exists@skip@\mst@version\endcsname
551     {\mst@exists@skip}
552   \expandafter\edef\csname mst@forall@skip@\mst@version\endcsname
553     {\mst@forall@skip}
554   \expandafter\edef\csname mst@prime@skip@\mst@version\endcsname
555     {\mst@prime@skip}
556   \mst@optionalparamfalse
557   \ifx\@empty#1
558     \else % we check nevertheless for [] situation, will not work with [ ]
559       \def\mst@tmp{#1}
560       \ifx\mst@tmp\@empty\else\mst@optionalparamtrue\fi
561     \fi
562   \ifmst@optionalparam
563     \SetSymbolFont{mtletterfont}{#2}{#3}{#4}{#5}{#1}
564     \typeout{** Latin letters in math version ‘#2’ will use the font
565       #3/#4/#5/#1~J%
566     ** Other characters (digits, ...) and \protect\log-like
567     names will be in #6 shape.}
568     \expandafter\edef\csname mst@ltshape@\mst@version\endcsname{#1}
569   \else
570     \ifmst@italic
571       \SetSymbolFont{mtletterfont}{#2}{#3}{#4}{#5}{\mst@ltsh}

```

```

572 \typeout{** Latin letters in math version ‘#2’ will use the font
573 #3/#4/#5/\mst@ltsh^^J%
574 ** Other characters (digits, ...) and \protect\log-like names
575 will be in #6 shape.}
576 \expandafter\edef\csname mst@ltshape@\mst@version\endcsname{\mst@ltsh}
577 \else
578 \SetSymbolFont{mtletterfont}{#2}{#3}{#4}{#5}{#6}
579 \typeout{** Latin letters in math version ‘#2’ will use the fonts
580 #3/#4/#5(\mst@bold)/#6}
581 \expandafter\edef\csname mst@ltshape@\mst@version\endcsname{#6}
582 \fi
583 \fi
584 \ifmst@nonormalbold\else
585 \SetMathAlphabet{\mathnormalbold}{#2}{#3}{#4}{\mst@bold}
586 {\csname
587 mst@ltshape@\mst@version\endcsname}
588 \fi
589 \SetSymbolFont{mtooperatorfont}{#2}{#3}{#4}{#5}{#6}
590 \ifmst@defaultbf\else\SetMathAlphabet{\Mathbf}{#2}{#3}{#4}{\mst@bold}{#6}\fi
591 \ifmst@defaultit\else\SetMathAlphabet{\Mathit}{#2}{#3}{#4}{#5}{\itdefault}\fi
592 \ifmst@defaultsf\else\SetMathAlphabet{\Mathsf}{#2}{#3}{\sfdefault}{#5}{#6}\fi
593 \ifmst@defaulttt\else\SetMathAlphabet{\Mathtt}{#2}{#3}{\ttdefault}{#5}{#6}\fi
594 \ifmst@needeuler
595 \SetMathAlphabet{\MathEulerBold}{#2}{U}{zeur}{\mst@bold}{n}
596 \fi

```

LGRgreeks In the case of option LGRgreeks (selfGreeks), it is expected that the fonts used in
selfGreeks each math versions exist in LGR (OT1) encoding. We first recalculate the shapes
to be used for lowercase and uppercase Greek letters depending on the frenchmath
and [it/up][g/G]reek options as well as on the (local to this version) shapes for
letters and digits.

```

597 \def\mst@greek@lsh@loc{\csname mst@ltshape@\mst@version\endcsname}
598 \def\mst@greek@ush@loc{\csname mst@shape@\mst@version\endcsname}
599 \ifmst@itgreek\def\mst@greek@lsh@loc{\itdefault}
600 \def\mst@greek@ush@loc{\itdefault}\fi
601 \ifmst@upgreek\def\mst@greek@lsh@loc{\updefault}
602 \def\mst@greek@ush@loc{\updefault}\fi
603 \ifmst@frenchmath
604 \ifmst@itgreek\else
605 \ifmst@upgreek\else
606 \def\mst@greek@lsh@loc{\csname mst@shape@\mst@version\endcsname}
607 \def\mst@greek@ush@loc{\csname mst@shape@\mst@version\endcsname}
608 \fi\fi
609 \fi
610 \ifcase\mst@greek@select
611 \or\def\mst@greek@ush@loc{\itdefault}
612 \or\def\mst@greek@ush@loc{\updefault}
613 \fi

```

```

614 \ifmst@LGRgreeks
615     \SetSymbolFont{mtlgrfontlower}{#2}{LGR}{#4}{#5}{\mst@greek@lsh@loc}
616     \SetSymbolFont{mtlgrfontupper}{#2}{LGR}{#4}{#5}{\mst@greek@ush@loc}
617     \typeout{** Greek letters (\mst@greek@lsh@loc/\mst@greek@ush@loc) will use
618         LGR font #4}
619 \else
620 \ifmst@selfGreeks
621     \SetSymbolFont{mtselfGreefont}{#2}{OT1}{#4}{#5}{\mst@greek@ush@loc}
622     \typeout{** Capital Greek letters (\mst@greek@lsh@loc/\mst@greek@ush@loc)
623         will use OT1 font #4}
624 \else
625 \ifmst@LGRgreek
626     \SetSymbolFont{mtlgrfontlower}{#2}{LGR}{\mst@greekfont}{#5}{\mst@greek@lsh@loc}
627     \SetSymbolFont{mtlgrfontupper}{#2}{LGR}{\mst@greekfont}{#5}{\mst@greek@ush@loc}
628     \typeout{** Greek letters (\mst@greek@lsh@loc/\mst@greek@ush@loc) will use
629         LGR font \mst@greekfont}
630 \else
631 \ifmst@selfGreek
632     \SetSymbolFont{mtselfGreefont}{#2}{OT1}{\mst@greekfont}{#5}{\mst@greek@ush@loc}
633     \typeout{** Capital Greek letters (\mst@greek@lsh@loc/\mst@greek@ush@loc)
634         will use OT1 font \mst@greekfont}
635 \fi\fi\fi\fi
636 %\mst@font@info@on
637 }
638 \@onlypreamble\MTDeclareVersion

```

```

639 \let\MathastextDeclareVersion\MTDeclareVersion

```

\MTVersion This is a wrapper around L^AT_EX's `\mathversion`: here we have an optional argument allowing a quick and easy change of the text fonts additionally to the math fonts. Present already in the initial version of the package (January 2011.)

v1.15: some modifications for the subdued option vs LGRgreek and for the math muskips after `\exists` and `\forall`.

v1.2: the subdued option sets up the math alphabets in the normal and bold math versions to not apply to operator names and non-alphabetical symbols. The switch for braces is left as it is.

```

640 \newcommand*{\MTVersion}[2][\@empty]{%
641     \mathversion{#2}%
642     \ifx\@empty#1% no optional argument
643         \edef\mst@tmp{#2}
644     \else% we check nevertheless for [] situation, will not work with [ ]
645         \def\mst@tmpa{#1}%
646         \ifx\mst@tmpa\@empty\edef\mst@tmp{#2}%
647         \else\edef\mst@tmp{#1}%
648         \fi%
649     \fi%
650     \usefont{\csname mst@encoding@\mst@tmp\endcsname}%
651         {\csname mst@family@\mst@tmp\endcsname}%

```

```

652         {\csname mst@series@\mst@tmp\endcsname}%
653         {\csname mst@shape@\mst@tmp\endcsname}%
654         \edef\mst@@encoding{\csname mst@encoding@\mst@tmp\endcsname}%
655         \renewcommand{\encodingdefault}{\mst@@encoding}%
656 %% some modifications for v1.15b
657         \edef\mst@@famdefault{\csname mst@family@\mst@tmp\endcsname}%
658         \renewcommand{\familydefault}{\mst@@famdefault}%
659         \edef\mst@@series{\csname mst@series@\mst@tmp\endcsname}%
660         \renewcommand{\mddefault}{\mst@@series}%
661         \edef\mst@@shape{\csname mst@shape@\mst@tmp\endcsname}%
662         \renewcommand{\shapedefault}{\mst@@shape}%
663         \edef\mst@@boldvariant{\csname mst@boldvariant@\mst@tmp\endcsname}%
664         \renewcommand{\bfdefault}{\mst@@boldvariant}%
665         \edef\mst@@itdefault{\csname mst@itdefault@\mst@tmp\endcsname}%
666         \renewcommand{\itdefault}{\mst@@itdefault}%
667         \edef\mst@@rmdefault{\csname mst@rmdefault@\mst@tmp\endcsname}%
668         \renewcommand{\rmdefault}{\mst@@rmdefault}%
669         \edef\mst@@sfdefault{\csname mst@sfdefault@\mst@tmp\endcsname}%
670         \renewcommand{\sfdefault}{\mst@@sfdefault}%
671         \edef\mst@@ttdefault{\csname mst@ttdefault@\mst@tmp\endcsname}%
672         \renewcommand{\ttdefault}{\mst@@ttdefault}%
673 %% v1.15e: muskips
674         \expandafter\mst@exists@muskip\csname mst@exists@skip@\mst@tmp\endcsname\relax
675         \expandafter\mst@forall@muskip\csname mst@forall@skip@\mst@tmp\endcsname\relax
676 %% v1.2: muskip for \cs{prime}
677         \expandafter\mst@prime@muskip\csname mst@prime@skip@\mst@tmp\endcsname\relax
678 %% v1.15c: extending subdued to LGRgreek
679 %% v1.15f: subdueing math alphabets in a simpler way than in 1.15e
680 \ifmst@subdued
681 \edef\mst@tmp{#2}\def\mst@tmpa{normal}%
682 \ifx\mst@tmp\mst@tmpa
683 \mst@restorealphabets
684 \operatornamesdonotobeymathalphabets
685 \nonlettersdonotobeymathalphabets
686 \ifmst@LGRgreek\mst@restoregreek\fi
687 \else
688 \def\mst@tmpa{bold}%
689 \ifx\mst@tmp\mst@tmpa
690 \mst@restorealphabets
691 \operatornamesdonotobeymathalphabets
692 \nonlettersdonotobeymathalphabets
693 \ifmst@LGRgreek\mst@restoregreek\fi
694 \else
695 \mst@setalphabets
696 \operatornamesobeymathalphabets
697 \nonlettersobeymathalphabets
698 \ifmst@LGRgreek\mst@setuplgrgreek\fi
699 \fi\fi\fi
700 }

```

```

701 \let\MathastextVersion\MTVersion
702 \let\Mathastextversion\MTVersion
703 \let\MTversion\MTVersion
704 \let\mathastextversion\MTVersion

```

`\Mathastext` Initialization call:

```
705 \Mathastext
```

Additional appropriate messages to the terminal and the log.

```

706 \ifmst@eulergreek
707     \typeout{** Greek letters will use the Euler font. Use^^J%
708 ** \protect\MathastextEulerScale{<factor>} to scale the font.}
709 \else
710 \ifmst@symbolgreek
711     \typeout{** Greek letters will use the PostScript Symbol font. Use^^J%
712 ** \protect\MathastextSymbolScale{<factor>} to scale the font.}
713 \fi\fi

```

At (long...) last we now change the font for the letters of the latin alphabet. In version 1.1, Latin letters have their own font (shape).

```

714 \DeclareMathSymbol{a}{\mathalpha}{mtletterfont}{‘a}
715 \DeclareMathSymbol{b}{\mathalpha}{mtletterfont}{‘b}
716 \DeclareMathSymbol{c}{\mathalpha}{mtletterfont}{‘c}
717 \DeclareMathSymbol{d}{\mathalpha}{mtletterfont}{‘d}
718 \DeclareMathSymbol{e}{\mathalpha}{mtletterfont}{‘e}
719 \DeclareMathSymbol{f}{\mathalpha}{mtletterfont}{‘f}
720 \DeclareMathSymbol{g}{\mathalpha}{mtletterfont}{‘g}
721 \DeclareMathSymbol{h}{\mathalpha}{mtletterfont}{‘h}
722 \DeclareMathSymbol{i}{\mathalpha}{mtletterfont}{‘i}
723 \DeclareMathSymbol{j}{\mathalpha}{mtletterfont}{‘j}
724 \DeclareMathSymbol{k}{\mathalpha}{mtletterfont}{‘k}
725 \DeclareMathSymbol{l}{\mathalpha}{mtletterfont}{‘l}
726 \DeclareMathSymbol{m}{\mathalpha}{mtletterfont}{‘m}
727 \DeclareMathSymbol{n}{\mathalpha}{mtletterfont}{‘n}
728 \DeclareMathSymbol{o}{\mathalpha}{mtletterfont}{‘o}
729 \DeclareMathSymbol{p}{\mathalpha}{mtletterfont}{‘p}
730 \DeclareMathSymbol{q}{\mathalpha}{mtletterfont}{‘q}
731 \DeclareMathSymbol{r}{\mathalpha}{mtletterfont}{‘r}
732 \DeclareMathSymbol{s}{\mathalpha}{mtletterfont}{‘s}
733 \DeclareMathSymbol{t}{\mathalpha}{mtletterfont}{‘t}
734 \DeclareMathSymbol{u}{\mathalpha}{mtletterfont}{‘u}
735 \DeclareMathSymbol{v}{\mathalpha}{mtletterfont}{‘v}
736 \DeclareMathSymbol{w}{\mathalpha}{mtletterfont}{‘w}
737 \DeclareMathSymbol{x}{\mathalpha}{mtletterfont}{‘x}
738 \DeclareMathSymbol{y}{\mathalpha}{mtletterfont}{‘y}
739 \DeclareMathSymbol{z}{\mathalpha}{mtletterfont}{‘z}
740 \ifmst@frenchmath\def\mst@font@tbu{mtoperatorfont}
741     \else\def\mst@font@tbu{mtletterfont}\fi
742 \DeclareMathSymbol{A}{\mathalpha}{\mst@font@tbu}{‘A}

```

```

743 \DeclareMathSymbol{B}{\mathalpha}{\mst@font@tbu}{‘B}
744 \DeclareMathSymbol{C}{\mathalpha}{\mst@font@tbu}{‘C}
745 \DeclareMathSymbol{D}{\mathalpha}{\mst@font@tbu}{‘D}
746 \DeclareMathSymbol{E}{\mathalpha}{\mst@font@tbu}{‘E}
747 \DeclareMathSymbol{F}{\mathalpha}{\mst@font@tbu}{‘F}
748 \DeclareMathSymbol{G}{\mathalpha}{\mst@font@tbu}{‘G}
749 \DeclareMathSymbol{H}{\mathalpha}{\mst@font@tbu}{‘H}
750 \DeclareMathSymbol{I}{\mathalpha}{\mst@font@tbu}{‘I}
751 \DeclareMathSymbol{J}{\mathalpha}{\mst@font@tbu}{‘J}
752 \DeclareMathSymbol{K}{\mathalpha}{\mst@font@tbu}{‘K}
753 \DeclareMathSymbol{L}{\mathalpha}{\mst@font@tbu}{‘L}
754 \DeclareMathSymbol{M}{\mathalpha}{\mst@font@tbu}{‘M}
755 \DeclareMathSymbol{N}{\mathalpha}{\mst@font@tbu}{‘N}
756 \DeclareMathSymbol{O}{\mathalpha}{\mst@font@tbu}{‘O}
757 \DeclareMathSymbol{P}{\mathalpha}{\mst@font@tbu}{‘P}
758 \DeclareMathSymbol{Q}{\mathalpha}{\mst@font@tbu}{‘Q}
759 \DeclareMathSymbol{R}{\mathalpha}{\mst@font@tbu}{‘R}
760 \DeclareMathSymbol{S}{\mathalpha}{\mst@font@tbu}{‘S}
761 \DeclareMathSymbol{T}{\mathalpha}{\mst@font@tbu}{‘T}
762 \DeclareMathSymbol{U}{\mathalpha}{\mst@font@tbu}{‘U}
763 \DeclareMathSymbol{V}{\mathalpha}{\mst@font@tbu}{‘V}
764 \DeclareMathSymbol{W}{\mathalpha}{\mst@font@tbu}{‘W}
765 \DeclareMathSymbol{X}{\mathalpha}{\mst@font@tbu}{‘X}
766 \DeclareMathSymbol{Y}{\mathalpha}{\mst@font@tbu}{‘Y}
767 \DeclareMathSymbol{Z}{\mathalpha}{\mst@font@tbu}{‘Z}
768 %%
769 \ifmst@nodigits\else
770 \def\mst@font@tbu{mtoperatorfont}

```

In version 1.1, we have now separated digits from letters, so paradoxically it is less problematic to give them the `mathalpha` type.

```

771 \ifmst@symboldigits \def\mst@font@tbu{mtpsymbfont} \fi
772 \ifmst@eulerdigits \def\mst@font@tbu{mteulervm} \fi
773 \DeclareMathSymbol{0}{\mathalpha}{\mst@font@tbu}{‘0}
774 \DeclareMathSymbol{1}{\mathalpha}{\mst@font@tbu}{‘1}
775 \DeclareMathSymbol{2}{\mathalpha}{\mst@font@tbu}{‘2}
776 \DeclareMathSymbol{3}{\mathalpha}{\mst@font@tbu}{‘3}
777 \DeclareMathSymbol{4}{\mathalpha}{\mst@font@tbu}{‘4}
778 \DeclareMathSymbol{5}{\mathalpha}{\mst@font@tbu}{‘5}
779 \DeclareMathSymbol{6}{\mathalpha}{\mst@font@tbu}{‘6}
780 \DeclareMathSymbol{7}{\mathalpha}{\mst@font@tbu}{‘7}
781 \DeclareMathSymbol{8}{\mathalpha}{\mst@font@tbu}{‘8}
782 \DeclareMathSymbol{9}{\mathalpha}{\mst@font@tbu}{‘9}
783 \fi

```

When `symboldelimiters` is passed as an option, we use the Symbol font for the printable characters other than letters and digits.

```

784 \ifmst@symboldelimiters
785 \def\mst@font@tbu{mtpsymbfont}
786 \mst@endashfalse

```

```

787 \mst@emdashfalse
788 \else
789 \def\mst@font@tbu{mtoperatorfont}
790 \fi

```

v1.2 adds the tricks to let non letters/digits obey math alphabets. We have to double the definitions for easy switch on-off of the mechanism, via a token list which is put into `\everymath` and `\everydisplay`.

```

791 \ifmst@noexclam\else
792 \DeclareMathSymbol{!}{\mathclose}{\mst@font@tbu}{"21}
793 \DeclareMathSymbol{\mst@alpha@exclam}{\mathalpha}{\mst@font@tbu}{"21}
794 \mst@addtoactivate\!\mathclose\mst@alpha@exclam
795 \DeclareMathSymbol{?}{\mathclose}{\mst@font@tbu}{"3F}
796 \DeclareMathSymbol{\mst@alpha@question}{\mathalpha}{\mst@font@tbu}{"3F}
797 \mst@addtoactivate\?\mathclose\mst@alpha@question
798 \fi
799 %%
800 \ifmst@noast\else
801 \DeclareMathSymbol{*}{\mathalpha}{\mst@font@tbu}{"2A}
802 \fi

```

(2011) I completely renounced to try to do things with all the various dots, they are defined in many different ways, and there is the `amsmath` also. Dealing with this issue would mean a lot a time for a minuscule result. Better to leave the user use the `mathdots` package and accept that we can not avoid the default fonts in that case. So here I just treat `.` (in the hope to really lessen by 1 the number of fonts embedded at the end in the PDF). [(Dec. 2012) should I reexamine these definitive sounding remarks?]

```

803 \ifmst@nopunct\else
804 \DeclareMathSymbol{,}{\mathpunct}{\mst@font@tbu}{"2C}
805 \DeclareMathSymbol{\mst@alpha@comma}{\mathalpha}{\mst@font@tbu}{"2C}
806 \mst@addtoactivate\,\mathpunct\mst@alpha@comma
807 \DeclareMathSymbol{.}{\mathpunct}{\mst@font@tbu}{"2E}
808 \DeclareMathSymbol{\mst@alpha@dot}{\mathalpha}{\mst@font@tbu}{"2E}
809 \mst@addtoactivate\.\mathpunct\mst@alpha@dot
810 \DeclareMathSymbol{:}{\mathrel}{\mst@font@tbu}{"3A} % relation spacing
811 \DeclareMathSymbol{\mst@alpha@colon}{\mathalpha}{\mst@font@tbu}{"3A}
812 \mst@addtoactivate\:\mathrel\mst@alpha@colon
813 \ifpackageloaded{amsmath}
814 {} % \colon defined in amsmath.sty in terms of : with some enlarged explicit
815 % spacing. No need to intervene.
816 {% \let\colon\undefined % I had this \undefined since ages but why?
817 % the reason is if some package has redefined \colon as amsmath does
818 % no amsmath, use standard punctuation spacing
819 \DeclareMathSymbol{\colon}{\mathpunct}{\mst@font@tbu}{"3A}
820 \mst@activatelist\expandafter{\the\mst@activatelist
821 \def\colon{\mathpunct{\mst@alpha@colon}}}}
822 \DeclareMathSymbol{;}{\mathpunct}{\mst@font@tbu}{"3B}
823 \DeclareMathSymbol{\mst@alpha@pointvirgule}{\mathalpha}{\mst@font@tbu}{"3B}

```



```

824 \mst@addtoactivate\;\mathpunct\mst@alpha@pointvirgule
825 \fi

```

`\relbar` Due to the way `=` and `-` are used by L^AT_EX in arrows, we will have to redefine `\Relbar` and `\relbar` in order for them to preserve their original meanings.

1.15d: Oct 13, 2012. Belated amendment of the code to be compatible with Unicode engines in case someone changed the mathcode of `-`. However, for the time being I can do it in an easy way only for XeTeX, not for LuaLatex. Also I do my modifications to `\relbar` in a manner testing for the presence of `amsmath`.

```

826 \ifmst@nominus\else
827 \ifXeTeX
828 \XeTeXmathcharnumdef\mst@minus@sign=\XeTeXmathcodenum'\-\relax

```

We could also have used

```

\edef\mst@minus@sign{\expandafter\XeTeXmathcharnum\the\XeTeXmathcodenum'\-
\relax} but not \def\mst@minus@sign{\XeTeXmathcharnum\XeTeXmathcodenum'\-
}

```

```

829 \else
830 \ifLuaTeX
831 %% \luatexUmathcharnumdef\mst@minus@sign=\luatexUmathcodenum'\-\relax ne
832 %% marche pas pour le moment car \luatexUmathcodenum retourne parfois un
833 %% legacy mathcode, parfois un Unicode mathcode, \a mon avis c'est un bug
834 %% de LuaLatex. En fait Taco H me dit que la prochaine version
835 %% r\eglera ce probl\eme. \luatexUmathchardef\mst@minus@sign="2 "2 "0\relax
836 \mathchardef\mst@minus@sign=8704\relax % "2200
837 \else
838 \mathchardef\mst@minus@sign=\mathcode'\-\relax
839 \fi\fi
840 \ifpackageloaded{amsmath}
841 {\def\relbar{\mathrel{\mathpalette\mathsm@sh\mst@minus@sign}}}
842 {\DeclareRobustCommand\relbar{\mathrel{\smash\mst@minus@sign}}}
843 \def\rightarrowfill{$\m@th\mathord{\relbar}\mkern-7mu%
844 \cleaders\hbox{$\mkern-2mu\relbar\mkern-2mu$}\hfill
845 \mkern-7mu\mathord{\rightarrow$}
846 \def\leftarrowfill{$\m@th\mathord{\leftarrow}\mkern-7mu%
847 \cleaders\hbox{$\mkern-2mu\relbar\mkern-2mu$}\hfill
848 \mkern-7mu\mathord{\relbar}$}
849 \fi

```

`endash` 2011/01/29, v1.1. Producing this next piece of code was not a piece of cake for a novice like myself!

2011/02/05, v1.11. Compatibility with Unicode (via use of `fontspec` encodings EU1 and EU2)

2011/02/07, v1.12. Improved dealing of Unicode possibility.

2011/04/02, v1.14b. Corrected some very irresponsible bug in the Unicode part which caused a problem when 10 or more math families have been allocated.

2012/09/24, v1.15. Added `AtBeginDocument` to circumvent some `amsmath` problem

with unicode engines.

```

850 \def\do@the@endashstuff{\edef\mst@tmp@enc{\encodingdefault}
851 \ifx\mst@tmp@enc\mst@eui % xetex+fontspec
852 \AtBeginDocument{\XeTeXmathcode'\-="2 \symmoperatorfont "2013\relax}
853 \AtBeginDocument{\XeTeXmathchardef\mst@alpha@minus="7 \symmoperatorfont "2013\relax}
854 \else
855 \ifx\mst@tmp@enc\mst@euii % luatex+fontspec
856 \AtBeginDocument{\luatexUmathcode'\-="2 \symmoperatorfont "2013\relax}
857 \AtBeginDocument{\luatexUmathchardef\mst@alpha@minus="7 \symmoperatorfont "2013\relax}
858 \else
859 \ifx\mst@tmp@enc\mst@ti % T1
860 \DeclareMathSymbol{-}{\mathbin}{moperatorfont}{21}
861 \DeclareMathSymbol{\mst@alpha@minus}{\mathalpha}{moperatorfont}{21}
862 \else
863 \ifx\mst@tmp@enc\mst@oti % OT1
864 \DeclareMathSymbol{-}{\mathbin}{moperatorfont}{123}
865 \DeclareMathSymbol{\mst@alpha@minus}{\mathalpha}{moperatorfont}{123}
866 \else
867 \ifx\mst@tmp@enc\mst@lyi % LY1
868 \DeclareMathSymbol{-}{\mathbin}{moperatorfont}{150}
869 \DeclareMathSymbol{\mst@alpha@minus}{\mathalpha}{moperatorfont}{150}
870 \else % make sure we have neither xetex nor luatex
871 \ifXeTeX\mst@aborttrue\else\ifLuaTeX\mst@aborttrue\else
872 \DeclareMathSymbol{-}{\mathbin}{moperatorfont}
873 \DeclareMathSymbol{\mst@alpha@minus}{\mathalpha}{moperatorfont}
874 {\expandafter\the\expandafter\csname\mst@tmp@enc\string\textendash\endcsname}
875 \fi\fi
876 \fi\fi\fi\fi\fi}
877 \def\do@the@emdashstuff{\edef\mst@tmp@enc{\encodingdefault}
878 \ifx\mst@tmp@enc\mst@eui % xetex+fontspec
879 \AtBeginDocument{\XeTeXmathcode'\-="2 \symmoperatorfont "2014\relax}
880 \AtBeginDocument{\XeTeXmathchardef\mst@alpha@minus="7 \symmoperatorfont "2014\relax}
881 \else
882 \ifx\mst@tmp@enc\mst@euii % luatex+fontspec
883 \AtBeginDocument{\luatexUmathcode'\-="2 \symmoperatorfont "2014\relax}
884 \AtBeginDocument{\luatexUmathchardef\mst@alpha@minus="7 \symmoperatorfont "2014\relax}
885 \else
886 \ifx\mst@tmp@enc\mst@ti % T1
887 \DeclareMathSymbol{-}{\mathbin}{moperatorfont}{22}
888 \DeclareMathSymbol{\mst@alpha@minus}{\mathalpha}{moperatorfont}{22}
889 \else
890 \ifx\mst@tmp@enc\mst@oti % OT1
891 \DeclareMathSymbol{-}{\mathbin}{moperatorfont}{124}
892 \DeclareMathSymbol{\mst@alpha@minus}{\mathalpha}{moperatorfont}{124}
893 \else
894 \ifx\mst@tmp@enc\mst@lyi % LY1
895 \DeclareMathSymbol{-}{\mathbin}{moperatorfont}{151}
896 \DeclareMathSymbol{\mst@alpha@minus}{\mathalpha}{moperatorfont}{151}
897 \else % make sure we have neither xetex nor luatex

```



```

930 \DeclareMathAccent{\mst@ltbar}{\mathalpha}{mtletterfont}{9}
931 \else %% assume OT1. Bad idea? Should not provoke an error anyhow
932 \DeclareMathAccent{\mst@ltbar}{\mathalpha}{mtletterfont}{22}
933 \fi
934 \def\hbar{\mst@mathrlap{\mst@ltbar{\ }h}
935 \fi\fi}
936 \ifmst@nohbar\else\do@the@hbarstuff\fi

```

As `h` is from `mtletterfont`, the accent `\mst@ltbar` is the `\bar` accent from that same font. Of course, if the user defines math versions with other encodings than the default one when loading the package this will probably not work there (if I knew how to do for accents what I did for the endash I could do it for all encodings. Surely easy for a `TeX`pert.) Not to mention if he/she changes the letter shape... one never should give so much freedom to users ;-). Well this construction gives an acceptable result for some of the fonts I have tested, whether upright or in italics.

1.15d: Oct 13, 2012. The `\mathcode` thing with `=` is (belatedly, sorry!) made Unicode compatible.

`+,=,\Relbar`

```

937 \ifmst@noplus\else
938 \DeclareMathSymbol{+}{\mathbin}{\mst@font@tbu}{"2B}
939 \DeclareMathSymbol{\mst@alpha@plus}{\mathalpha}{\mst@font@tbu}{"2B}
940 \mst@addtoactivate\+\mathbin\mst@alpha@plus
941 \fi
942 \ifmst@noequal\else
943 \ifXeTeX
944 \XeTeXmathcharnumdef\mst@equal@sign=\XeTeXmathcodenum'\=\relax
945 \else
946 \ifLuaTeX
947 %% 12 octobre 2012 \luatexUmathcodenum'\=
948 %% ne marche pas pour le moment \a cause du fait que \luatexUmathcodenum
949 %% donne un mathcode sur 8bit ou un Unicode mathcode sans qu'on puisse
950 %% savoir lequel
951 %% \luatexUmathchardef\mst@equal@sign="3 "0 "3D\relax
952 \mathchardef\mst@equal@sign=12349\relax
953 \else
954 \mathchardef\mst@equal@sign=\mathcode'\=\relax
955 \fi\fi
956 \@ifpackageloaded{amsmath}
957 {\def\Relbar{\mathrel\mst@equal@sign}}
958 {\DeclareRobustCommand\Relbar{\mathrel{\mst@equal@sign}}}
959 \DeclareMathSymbol{=}{\mathrel}{\mst@font@tbu}{"3D}
960 \DeclareMathSymbol{\mst@alpha@equal}{\mathalpha}{\mst@font@tbu}{"3D}

```

`\nfss@catcodes` 2012/12/18: Activating `=` (only in math mode actually) seems very bad but surprisingly works well. However I had a problem with `eu2lmtt.fd` which should not be loaded with an active `=`. So far I have not detected other problems with "8000.

```

961 \ifLuaTeX\g@addto@macro\nfss@catcodes{\@makeother\=}\fi

```

```

962 \mst@addtoactivate\=\mathrel\mst@alpha@equal
963 \fi

noparenthesis  \lbrack and \rbrack are defined in latex.ltx by \def\lbrack{[]}\def\rbrack{[]}]
(,),[,],/ so this fits well with what we do here. \lparen and \rparen are similarly defined
in mathtools. On the other hand the opposite thing is done in latex.ltx with \{
and \} which are defined in terms of the control sequences \lbrace and \rbrace.

964 \ifmst@noparen\else
965 \ifmst@nosmallldelims
966   \DeclareMathSymbol{({}\mathopen{}\mst@font@tbu}{28}
967   \DeclareMathSymbol{)}\mathclose{}\mst@font@tbu}{29}
968   \DeclareMathSymbol{[{}\mathopen{}\mst@font@tbu}{5B}
969   \DeclareMathSymbol{]}\mathclose{}\mst@font@tbu}{5D}
970   \DeclareMathSymbol{/}\mathord{}\mst@font@tbu}{2F}
971 \else
972   \DeclareMathDelimiter{({}\mathopen{}\mst@font@tbu}{28}{largesymbols}{00}
973   \DeclareMathDelimiter{)}\mathclose{}\mst@font@tbu}{29}{largesymbols}{01}
974   \DeclareMathDelimiter{[{}\mathopen{}\mst@font@tbu}{5B}{largesymbols}{02}
975   \DeclareMathDelimiter{]}\mathclose{}\mst@font@tbu}{5D}{largesymbols}{03}
976   \DeclareMathDelimiter{/}\mathord{}\mst@font@tbu}{2F}{largesymbols}{0E}
977 \fi
978 \DeclareMathSymbol{\mst@alpha@lparen}\mathalpha{}\mst@font@tbu}{40}
979 \DeclareMathSymbol{\mst@alpha@rparen}\mathalpha{}\mst@font@tbu}{41}
980 \DeclareMathSymbol{\mst@alpha@lbrack}\mathalpha{}\mst@font@tbu}{5B}
981 \DeclareMathSymbol{\mst@alpha@rbrack}\mathalpha{}\mst@font@tbu}{5D}
982 \DeclareMathSymbol{\mst@alpha@slash}\mathalpha{}\mst@font@tbu}{2F}
983 \mst@addtoactivate\(\mathopen\mst@alpha@lparen
984 \mst@addtoactivate\)\mathclose\mst@alpha@rparen
985 \mst@addtoactivate\[\mathopen\mst@alpha@lbrack
986 \mst@addtoactivate\]\mathclose\mst@alpha@rbrack
987 \mst@addtoactivate\/\mathord\mst@alpha@slash
988 \fi

alldelims
<,>,\ 989 \ifmst@alldelims
\setminus 990 \ifmst@nosmallldelims
\backslash Dec 18, 2012. We then want \let\backslash\mst@alpha@backslash to do nothing
when the \backslash is used as a delimiter. So I just copy here the original
definition from latex.ltx, generally speaking when people use other math symbol
fonts they do respect the encoding of the CM symbols and largesymbols, so this
is 90% safe. But in truth I should extract from the meaning of \backslash the
delcode.

991   \DeclareMathDelimiter{\mst@alpha@backslash}
992     {\mathalpha}{symbols}{6E}{largesymbols}{0F}
993 \else
994   \DeclareMathDelimiter{<}\mathopen{}\mst@font@tbu}{3C}{largesymbols}{0A}
995   \DeclareMathDelimiter{>}\mathclose{}\mst@font@tbu}{3E}{largesymbols}{0B}

```

There is no backslash in the Symbol font hence `mtooperatorfont` here.

```

996 \expandafter\DeclareMathDelimiter\@backslashchar
997 {\mathord}{mtooperatorfont}{5C}{largesymbols}{OF}
998 \DeclareMathDelimiter{\backslash}
999 {\mathord}{mtooperatorfont}{5C}{largesymbols}{OF}
1000 \DeclareMathDelimiter{\mst@alpha@backslash}
1001 {\mathalpha}{mtooperatorfont}{5C}{largesymbols}{OF}
1002 \fi
1003 \DeclareMathSymbol{<}{\mathrel}{\mst@font@tbu}{3C}
1004 \DeclareMathSymbol{>}{\mathrel}{\mst@font@tbu}{3E}
1005 \DeclareMathSymbol{\mst@alpha@less}{\mathalpha}{\mst@font@tbu}{3C}
1006 \DeclareMathSymbol{\mst@alpha@more}{\mathalpha}{\mst@font@tbu}{3E}
1007 \mst@addtoactivate\<\mathrel\mst@alpha@less
1008 \mst@addtoactivate\>\mathrel\mst@alpha@more
1009 \mst@activatelist\expandafter{\the\mst@activatelist
1010 \let\backslash\mst@alpha@backslash}
1011 \DeclareMathSymbol{\setminus}{\mathbin}{mtooperatorfont}{5C}
1012 \DeclareMathSymbol{\mst@alpha@setminus}{\mathalpha}{mtooperatorfont}{5C}
1013 \mst@activatelist\expandafter{\the\mst@activatelist
1014 \def\setminus{\mathbin{\mst@alpha@setminus}}}
```

`\models` 1.15d: 13 oct 2012. Before modifying | we must preserve `\models`.

```

1015 \ifXeTeX
1016 \XeTeXmathcharnumdef\mst@vert@bar=\XeTeXmathcodenum'\|\relax
1017 \else
1018 \ifLuaTeX
1019 %% \luatexumathchardef\mst@vert@bar="0 "2 "006A\relax
1020 \mathchardef\mst@vert@bar=618\relax
1021 \else\mathchardef\mst@vert@bar=\mathcode'\|\relax
1022 \fi\fi
1023 \DeclareRobustCommand\models{\mathrel{\mst@vert@bar}\joinrel\Relbar}
```

`|`, `\mid`, `\vert` (2011) I did not do anything then to try to emulate `\Vert` with the vertical bar from the text font... and now (2012) **mathastext** is not as radical as it used to be anyhow, so it is too late.

```

1024 \ifmst@nosmallldelims
1025 \DeclareMathSymbol{|}{\mathord}{\mst@font@tbu}{124}
1026 \else
1027 \DeclareMathDelimiter{|}{\mathord}{\mst@font@tbu}{124}{largesymbols}{OC}
1028 \fi
1029 \def\vert{|}
1030 \DeclareMathSymbol{\mst@alpha@vbar}{\mathalpha}{\mst@font@tbu}{124}
1031 \mst@addtoactivate\|\mathord\mst@alpha@vbar
1032 \mst@activatelist\expandafter{\the\mst@activatelist}
1033 \DeclareMathSymbol{\mid}{\mathrel}{\mst@font@tbu}{124}
1034 \mst@activatelist\expandafter{\the\mst@activatelist
1035 \def\mid{\mathrel{\mst@alpha@vbar}}}
```

```

\explicitbraces- Braces. \{ and \} will not be acceptable as delimiters anymore if the redefinitions
obey- below in \mst@dobraces are enacted. But they will obey math alphabets.
mathalphabets 1036 \ifmst@nosmallldelims
\explicitbraces- 1037 \DeclareMathSymbol{\lbrace}{\mathopen}{\mst@font@tbu}{123}
donotobey- 1038 \DeclareMathSymbol{\rbrace}{\mathclose}{\mst@font@tbu}{125}
mathalphabets 1039 \else
1040 \DeclareMathDelimiter{\lbrace}
1041 {\mathopen}{\mst@font@tbu}{123}{largesymbols}{"08}
1042 \DeclareMathDelimiter{\rbrace}
1043 {\mathclose}{\mst@font@tbu}{125}{largesymbols}{"09}
1044 \fi
1045 \DeclareMathSymbol{\mst@alpha@lbrace}{\mathalpha}{\mst@font@tbu}{123}
1046 \DeclareMathSymbol{\mst@alpha@rbrace}{\mathalpha}{\mst@font@tbu}{125}
1047 \mst@activatelist\expandafter{\the\mst@activatelist
1048 \mst@dobraces{\def\{{\mathopen\mst@alpha@lbrace}%
1049 \def\}{\mathclose\mst@alpha@rbrace}}}
1050 \fi % end of \ifmst@alldelims
1051 \newcommand{\explicitbracesobeymathalphabets}{\let\mst@dobraces\@firstofone}
1052 \newcommand{\explicitbracesdonotobeymathalphabets}{\let\mst@dobraces\@gobble}
1053 \explicitbracesdonotobeymathalphabets

```

specials 1.14b (2011/04/02): the redefinitions of #, \$, % and & were buggy (this showed up when 10 or more math families had been created).

1.15f (2012/10/23): the code, although working, was a bit insane and had definitions which could surprise other packages. I (finally) correct this: I had been told that my earlier definitions caused a problem with `microtype`...

1.15g (2012/10/25): ... but it was *not* that insane, I just had forgotten the reason I did it that way! I just extended to the other specials what latex was doing with `\$ (\mathdollar!)`...

```

1054 \ifmst@nospecials\else
1055 \ifXeTeX
1056 \XeTeXmathcode'\#=7 \symmtooperatorfont "0023 \relax
1057 \XeTeXmathchardef\mathdollar=7 \symmtooperatorfont "0024 \relax
1058 \XeTeXmathcode'\%=7 \symmtooperatorfont "0025 \relax
1059 \XeTeXmathcode'\&=7 \symmtooperatorfont "0026 \relax
1060 \else
1061 \ifLuaTeX
1062 \luatexUmathcode'\#=7 \symmtooperatorfont "0023 \relax
1063 \luatexUmathchardef\mathdollar=7 \symmtooperatorfont "0024 \relax
1064 \luatexUmathcode'\%=7 \symmtooperatorfont "0025 \relax
1065 \luatexUmathcode'\&=7 \symmtooperatorfont "0026 \relax
1066 \else
1067 \count255=\symmtooperatorfont
1068 \multiply\count255 by 256
1069 \advance\count255 by 28707 % "7023
1070 \mathcode'\#\count255
1071 \advance\count255 by 1
1072 \mathchardef\mathdollar\count255

```

```

1073 \advance\count255 by 1
1074     \mathcode'\%\count255
1075 \advance\count255 by 1
1076     \mathcode'\&\count255
1077 \fi\fi\fi

```

symbolmisc We construct (with some effort) some long arrows from the Symbol glyphs, of almost the same lengths as the standard ones. By the way, I always found the `\iff` to be too wide, but I follow here the default. Also, although there is a `\longmapsto` in standard L^AT_EX, if I am not mistaken, there is no `\longto`. So I define one here. I could not construct in the same manner `\Longrightarrow` etc... as the `=` sign from Symbol does not combine easily with the logical arrows, well, I could have done some box manipulations, but well, life is finite.

`\prod` v1.13b: I correct the brutal re-definitions of `\prod` and `\sum` from the earlier versions of the package; most of the time the Symbol glyphs do appear to be too small in display mode. The new redefinitions do have some defects: `\displaystyle\prod_1^2` changes the position of limits but not the glyph itself, and `$$\textstyle\prod_1^2$$` change the limits but switches to the CM inline math glyph. So I tried
`\renewcommand{\prod}{\mathchoice{\mst@prod}{\prodpsy}{\prodpsy}{\prodpsy}}`
but this did not go well with subscripts and exponents.

Note oct 2012: maybe I should re-examine what I did?

```

1078 \ifmst@symbolmisc
1079 \let\mst@prod\prod
1080 \let\defaultprod\prod
1081 \DeclareMathSymbol{\prodpsy}{\mathop}{mtpsymbol}{213}
1082 \renewcommand{\prod}{\ifinner\prodpsy\else\mst@prod\fi}
1083 \let\mst@sum\sum
1084 \let\defaultsum\sum
1085 \DeclareMathSymbol{\sumpsy}{\mathop}{mtpsymbol}{229}
1086 \renewcommand{\sum}{\ifinner\sumpsy\else\mst@sum\fi}

1087 \DeclareMathSymbol{\mst@implies}{\mathrel}{mtpsymbol}{222}
1088 \DeclareRobustCommand{\implies}{\;\mst@implies\;}
1089 \DeclareMathSymbol{\mst@impliedby}{\mathrel}{mtpsymbol}{220}
1090 \DeclareRobustCommand{\impliedby}{\;\mst@impliedby\;}
1091 \DeclareRobustCommand{\iff}{\;\mst@impliedby\mathrel{\mkern-3mu}\mst@implies\;}
1092 \DeclareMathSymbol{\mst@iff}{\mathrel}{mtpsymbol}{219}
1093 \DeclareRobustCommand{\shortiff}{\;\mst@iff\;}
1094 \DeclareMathSymbol{\mst@to}{\mathrel}{mtpsymbol}{174}
1095 \DeclareMathSymbol{\mst@trait}{\mathrel}{mtpsymbol}{190}
1096 \DeclareRobustCommand\to{\mst@to}
1097 \DeclareRobustCommand\longto{\mkern2mu\mst@trait\mathrel{\mkern-10mu}\mst@to}
1098 \DeclareRobustCommand\mapsto{\mapstochar\mathrel{\mkern0.2mu}\mst@to}
1099 \DeclareRobustCommand\longmapsto{\%
1100 \mapstochar\mathrel{\mkern2mu}\mst@trait\mathrel{\mkern-10mu}\mst@to}
1101 \DeclareMathSymbol{\aleph}{\mathord}{mtpsymbol}{192}

```



```

1102 \DeclareMathSymbol{\infty}{\mathord}{mtpsymbol}{165}
1103 \DeclareMathSymbol{\emptyset}{\mathord}{mtpsymbol}{198}
1104 \let\varnothing\emptyset
1105 \DeclareMathSymbol{\nabla}{\mathord}{mtpsymbol}{209}
1106 \DeclareMathSymbol{\surd}{\mathop}{mtpsymbol}{214}
1107 \let\angle\undefined
1108 \DeclareMathSymbol{\angle}{\mathord}{mtpsymbol}{208}
1109 \DeclareMathSymbol{\forall}{\mathord}{mtpsymbol}{34}
1110 \DeclareMathSymbol{\exists}{\mathord}{mtpsymbol}{36}
1111 \DeclareMathSymbol{\neg}{\mathord}{mtpsymbol}{216}
1112 \DeclareMathSymbol{\clubsuit}{\mathord}{mtpsymbol}{167}
1113 \DeclareMathSymbol{\diamondsuit}{\mathord}{mtpsymbol}{168}
1114 \DeclareMathSymbol{\heartsuit}{\mathord}{mtpsymbol}{169}
1115 \DeclareMathSymbol{\spadesuit}{\mathord}{mtpsymbol}{170}
1116 \DeclareMathSymbol{\smallint}{\mathop}{mtpsymbol}{242}
1117 \DeclareMathSymbol{\wedge}{\mathbin}{mtpsymbol}{217}
1118 \DeclareMathSymbol{\vee}{\mathbin}{mtpsymbol}{218}
1119 \DeclareMathSymbol{\cap}{\mathbin}{mtpsymbol}{199}
1120 \DeclareMathSymbol{\cup}{\mathbin}{mtpsymbol}{200}
1121 \DeclareMathSymbol{\bullet}{\mathbin}{mtpsymbol}{183}
1122 \DeclareMathSymbol{\div}{\mathbin}{mtpsymbol}{184}
1123 \DeclareMathSymbol{\otimes}{\mathbin}{mtpsymbol}{196}
1124 \DeclareMathSymbol{\oplus}{\mathbin}{mtpsymbol}{197}
1125 \DeclareMathSymbol{\pm}{\mathbin}{mtpsymbol}{177}
1126 %%\DeclareMathSymbol{*}{\mathbin}{mtpsymbol}{42}
1127 \DeclareMathSymbol{\ast}{\mathbin}{mtpsymbol}{42}
1128 \DeclareMathSymbol{\times}{\mathbin}{mtpsymbol}{180}
1129 \DeclareMathSymbol{\propto}{\mathrel}{mtpsymbol}{181}
1130 \DeclareMathSymbol{\mid}{\mathrel}{mtpsymbol}{124}
1131 \DeclareMathSymbol{\leq}{\mathrel}{mtpsymbol}{163}
1132 \DeclareMathSymbol{\geq}{\mathrel}{mtpsymbol}{179}
1133 \DeclareMathSymbol{\approx}{\mathrel}{mtpsymbol}{187}
1134 \DeclareMathSymbol{\supset}{\mathrel}{mtpsymbol}{201}
1135 \DeclareMathSymbol{\subset}{\mathrel}{mtpsymbol}{204}
1136 \DeclareMathSymbol{\supseteq}{\mathrel}{mtpsymbol}{202}
1137 \DeclareMathSymbol{\subseteq}{\mathrel}{mtpsymbol}{205}
1138 \DeclareMathSymbol{\in}{\mathrel}{mtpsymbol}{206}
1139 \DeclareMathSymbol{\sim}{\mathrel}{mtpsymbol}{126}
1140 \let\cong\undefined
1141 \DeclareMathSymbol{\cong}{\mathrel}{mtpsymbol}{64}
1142 \DeclareMathSymbol{\perp}{\mathrel}{mtpsymbol}{94}
1143 \DeclareMathSymbol{\equiv}{\mathrel}{mtpsymbol}{186}
1144 \let\notin\undefined
1145 \DeclareMathSymbol{\notin}{\mathrel}{mtpsymbol}{207}
1146 \DeclareMathDelimiter{\rangle}
1147   {\mathclose}{mtpsymbol}{241}{largesymbols}{"0B}
1148 \DeclareMathDelimiter{\langle}
1149   {\mathopen}{mtpsymbol}{225}{largesymbols}{"0A}
1150 \fi

```

symbolre I like the `\Re` and `\Im` from `Symbol`, so I overwrite the CM ones.

```
1151 \ifmst@symbolre
1152 \DeclareMathSymbol{\Re}{\mathord}{mtpsymbol}{C2}
1153 \DeclareMathSymbol{\Im}{\mathord}{mtpsymbol}{C1}
1154 \DeclareMathSymbol{\DotTriangle}{\mathord}{mtpsymbol}{92}
1155 \fi
```

Greek letters LGRgreek > selfGreek > eulergreek > symbolgreek

v1.11 I correct some bugs on how eulergreek and symbolgreek interacted.

v1.12b I introduced another very stupid bug (regarding uppercase Greek) in v1.1. This is corrected here. All this business of checking for `\digamma` was truly stupid as some package might well have defined the font for Greek without having defined `\digamma`, I don't know what crossed my dumb mind when I committed this insane code and started redefining uppercase Greek, and it is even worse than that as I was redefining not only relatively benign things such as `\Alpha` but also `\Phi` etc...

v1.13 * Option LGRgreek.

* Also, a behavior has been changed: it regards the selfGreek case, the default shape is now the one for letters, not for operator-names and digits. This complies to the ISO standard.

* version 1.12b did not define the `\omicron` in the case when no Greek-related option was passed to the package. This was a bug.

```
1156 \let\mst@mathord\mathalpha
1157 \mst@goaheadtrue
1158 \ifmst@selfGreek
1159   \def\mst@font@tbu{mtselfGreekfont}
1160 \else
1161 \ifmst@eulergreek
1162   \def\mst@font@tbu{mteulervm}
1163 \else
1164 \ifmst@symbolgreek
1165   \def\mst@font@tbu{mtpsymbol}
1166   \let\mst@mathord\mathord
1167 \else
1168 \ifmst@LGRgreek
1169   \mst@goaheadfalse
1170 \else
```

The `\omicron` requires special treatment. By default we use the o from the (original) normal alphabet, if eulergreek or symbolgreek we adapt. There is also a special adjustment if the package `fourier` was loaded in its `upright` variant: we then take `\omicron` from the (original) rm alphabet.

```
1171   \mst@goaheadfalse
1172   \ifx\omicron\undefined
1173     \newcommand{\omicron}{\mst@alph@omicron{o}}
1174   \fi
1175 \fi\fi\fi\fi
1176 \ifmst@goahead
```

```

1177 \DeclareMathSymbol{\Alpha}{\mst@mathord}{\mst@font@tbu}{41}
1178 \DeclareMathSymbol{\Beta}{\mst@mathord}{\mst@font@tbu}{42}
1179 \DeclareMathSymbol{\Epsilon}{\mst@mathord}{\mst@font@tbu}{45}
1180 \DeclareMathSymbol{\Zeta}{\mst@mathord}{\mst@font@tbu}{5A}
1181 \DeclareMathSymbol{\Eta}{\mst@mathord}{\mst@font@tbu}{48}
1182 \DeclareMathSymbol{\Iota}{\mst@mathord}{\mst@font@tbu}{49}
1183 \DeclareMathSymbol{\Kappa}{\mst@mathord}{\mst@font@tbu}{4B}
1184 \DeclareMathSymbol{\Mu}{\mst@mathord}{\mst@font@tbu}{4D}
1185 \DeclareMathSymbol{\Nu}{\mst@mathord}{\mst@font@tbu}{4E}
1186 \DeclareMathSymbol{\Omicron}{\mst@mathord}{\mst@font@tbu}{4F}
1187 \DeclareMathSymbol{\Rho}{\mst@mathord}{\mst@font@tbu}{50}
1188 \DeclareMathSymbol{\Tau}{\mst@mathord}{\mst@font@tbu}{54}
1189 \DeclareMathSymbol{\Chi}{\mst@mathord}{\mst@font@tbu}{58}

```

When we in fact use Symbol, we have to correct \Rho and \Chi. And \Digamma is non-existent in fact (no F in Symbol, F codes a \Phi).

```

1190 \ifx\mst@mathord\mathord
    symbolgreek but neither eulergreek nor selfGreek
1191 %% attention le P de Symbol est un \Pi pas un \Rho
1192 \DeclareMathSymbol{\Rho}{\mathord}{\mstpsymbol}{52}
1193 %% attention le X de Symbol est un \Xi pas un \Chi
1194 \DeclareMathSymbol{\Chi}{\mathord}{\mstpsymbol}{43}
1195 %% attention le F de Symbol est un \Phi. Il n'y a pas de \Digamma
1196 \DeclareMathSymbol{\Gamma}{\mathord}{\mstpsymbol}{47}
1197 \DeclareMathSymbol{\Delta}{\mathord}{\mstpsymbol}{44}
1198 \DeclareMathSymbol{\Theta}{\mathord}{\mstpsymbol}{51}
1199 \DeclareMathSymbol{\Lambda}{\mathord}{\mstpsymbol}{4C}
1200 \DeclareMathSymbol{\Xi}{\mathord}{\mstpsymbol}{58}
1201 \DeclareMathSymbol{\Pi}{\mathord}{\mstpsymbol}{50}
1202 \DeclareMathSymbol{\Sigma}{\mathord}{\mstpsymbol}{53}
1203 \DeclareMathSymbol{\Upsilon}{\mathord}{\mstpsymbol}{A1}
1204 \DeclareMathSymbol{\Phi}{\mathord}{\mstpsymbol}{46}
1205 \DeclareMathSymbol{\Psi}{\mathord}{\mstpsymbol}{59}
1206 \DeclareMathSymbol{\Omega}{\mathord}{\mstpsymbol}{57}
1207 \else
    not symbolgreek but eulergreek or selfGreek or both
1208 \DeclareMathSymbol{\Digamma}{\mathalpha}{\mst@font@tbu}{46}
1209 \DeclareMathSymbol{\Gamma}{\mathalpha}{\mst@font@tbu}{00}
1210 \DeclareMathSymbol{\Delta}{\mathalpha}{\mst@font@tbu}{01}
1211 \DeclareMathSymbol{\Theta}{\mathalpha}{\mst@font@tbu}{02}
1212 \DeclareMathSymbol{\Lambda}{\mathalpha}{\mst@font@tbu}{03}
1213 \DeclareMathSymbol{\Xi}{\mathalpha}{\mst@font@tbu}{04}
1214 \DeclareMathSymbol{\Pi}{\mathalpha}{\mst@font@tbu}{05}
1215 \DeclareMathSymbol{\Sigma}{\mathalpha}{\mst@font@tbu}{06}
1216 \DeclareMathSymbol{\Upsilon}{\mathalpha}{\mst@font@tbu}{07}
1217 \DeclareMathSymbol{\Phi}{\mathalpha}{\mst@font@tbu}{08}
1218 \DeclareMathSymbol{\Psi}{\mathalpha}{\mst@font@tbu}{09}
1219 \DeclareMathSymbol{\Omega}{\mathalpha}{\mst@font@tbu}{0A}

```

```
1220 \fi
1221 \fi
```

There are differences regarding Euler and Symbol with respect to the available var-letters. We include one or two things like the `wp` and the `partial`.

The lower case Greek letters in default L^AT_EX are of type `mathord`. If we use the Euler font it is perhaps better to have them be of type `mathalpha`

```
1222 \ifmst@goahead
1223 \ifmst@eulergreek
1224 \DeclareMathSymbol{\alpha} {\mathalpha}{mteulervm}{0B}
1225 \DeclareMathSymbol{\beta} {\mathalpha}{mteulervm}{0C}
1226 \DeclareMathSymbol{\gamma} {\mathalpha}{mteulervm}{0D}
1227 \DeclareMathSymbol{\delta} {\mathalpha}{mteulervm}{0E}
1228 \DeclareMathSymbol{\epsilon} {\mathalpha}{mteulervm}{0F}
1229 \DeclareMathSymbol{\zeta} {\mathalpha}{mteulervm}{10}
1230 \DeclareMathSymbol{\eta} {\mathalpha}{mteulervm}{11}
1231 \DeclareMathSymbol{\theta} {\mathalpha}{mteulervm}{12}
1232 \DeclareMathSymbol{\iota} {\mathalpha}{mteulervm}{13}
1233 \DeclareMathSymbol{\kappa} {\mathalpha}{mteulervm}{14}
1234 \DeclareMathSymbol{\lambda} {\mathalpha}{mteulervm}{15}
1235 \DeclareMathSymbol{\mu} {\mathalpha}{mteulervm}{16}
1236 \DeclareMathSymbol{\nu} {\mathalpha}{mteulervm}{17}
1237 \DeclareMathSymbol{\xi} {\mathalpha}{mteulervm}{18}
1238 \let\omicron\undefined
1239 \DeclareMathSymbol{\omicron} {\mathalpha}{mteulervm}{6F}
1240 \DeclareMathSymbol{\pi} {\mathalpha}{mteulervm}{19}
1241 \DeclareMathSymbol{\rho} {\mathalpha}{mteulervm}{1A}
1242 \DeclareMathSymbol{\sigma} {\mathalpha}{mteulervm}{1B}
1243 \DeclareMathSymbol{\tau} {\mathalpha}{mteulervm}{1C}
1244 \DeclareMathSymbol{\upsilon} {\mathalpha}{mteulervm}{1D}
1245 \DeclareMathSymbol{\phi} {\mathalpha}{mteulervm}{1E}
1246 \DeclareMathSymbol{\chi} {\mathalpha}{mteulervm}{1F}
1247 \DeclareMathSymbol{\psi} {\mathalpha}{mteulervm}{20}
1248 \DeclareMathSymbol{\omega} {\mathalpha}{mteulervm}{21}
1249 \DeclareMathSymbol{\varepsilon} {\mathalpha}{mteulervm}{22}
1250 \DeclareMathSymbol{\vartheta} {\mathalpha}{mteulervm}{23}
1251 \DeclareMathSymbol{\varpi} {\mathalpha}{mteulervm}{24}
1252 \let\varrho=\rho
1253 \let\varsigma=\sigma
1254 \DeclareMathSymbol{\varphi} {\mathalpha}{mteulervm}{27}
1255 \DeclareMathSymbol{\partial} {\mathalpha}{mteulervm}{40}
1256 \DeclareMathSymbol{\wp} {\mathalpha}{mteulervm}{7D}
1257 \DeclareMathSymbol{\ell} {\mathalpha}{mteulervm}{60}
1258 \else
1259 \ifmst@symbolgreek
1260 \DeclareMathSymbol{\alpha} {\mathord}{mtpsymbol}{61}
1261 \DeclareMathSymbol{\beta} {\mathord}{mtpsymbol}{62}
1262 \DeclareMathSymbol{\gamma} {\mathord}{mtpsymbol}{67}
1263 \DeclareMathSymbol{\delta} {\mathord}{mtpsymbol}{64}
```

```

1264 \DeclareMathSymbol{\epsilon}{\mathord}{\mtpsymbol}{"65}
1265 \DeclareMathSymbol{\zeta}{\mathord}{\mtpsymbol}{"7A}
1266 \DeclareMathSymbol{\eta}{\mathord}{\mtpsymbol}{"68}
1267 \DeclareMathSymbol{\theta}{\mathord}{\mtpsymbol}{"71}
1268 \DeclareMathSymbol{\iota}{\mathord}{\mtpsymbol}{"69}
1269 \DeclareMathSymbol{\kappa}{\mathord}{\mtpsymbol}{"6B}
1270 \DeclareMathSymbol{\lambda}{\mathord}{\mtpsymbol}{"6C}
1271 \DeclareMathSymbol{\mu}{\mathord}{\mtpsymbol}{"6D}
1272 \DeclareMathSymbol{\nu}{\mathord}{\mtpsymbol}{"6E}
1273 \DeclareMathSymbol{\xi}{\mathord}{\mtpsymbol}{"78}
1274 \let\omicron\undefined
1275 \DeclareMathSymbol{\omicron}{\mathord}{\mtpsymbol}{"6F}
1276 \DeclareMathSymbol{\pi}{\mathord}{\mtpsymbol}{"70}
1277 \DeclareMathSymbol{\rho}{\mathord}{\mtpsymbol}{"72}
1278 \DeclareMathSymbol{\sigma}{\mathord}{\mtpsymbol}{"73}
1279 \DeclareMathSymbol{\tau}{\mathord}{\mtpsymbol}{"74}
1280 \DeclareMathSymbol{\upsilon}{\mathord}{\mtpsymbol}{"75}
1281 \DeclareMathSymbol{\phi}{\mathord}{\mtpsymbol}{"66}
1282 \DeclareMathSymbol{\chi}{\mathord}{\mtpsymbol}{"63}
1283 \DeclareMathSymbol{\psi}{\mathord}{\mtpsymbol}{"79}
1284 \DeclareMathSymbol{\omega}{\mathord}{\mtpsymbol}{"77}
1285 \let\varepsilon=\epsilon
1286 \DeclareMathSymbol{\vartheta}{\mathord}{\mtpsymbol}{"4A}
1287 \DeclareMathSymbol{\varpi}{\mathord}{\mtpsymbol}{"76}
1288 \let\varrho=\rho
1289 \DeclareMathSymbol{\varsigma}{\mathord}{\mtpsymbol}{"56}
1290 \DeclareMathSymbol{\varphi}{\mathord}{\mtpsymbol}{"6A}
1291 \DeclareMathSymbol{\partial}{\mathord}{\mtpsymbol}{"B6}
1292 \DeclareMathSymbol{\wp}{\mathord}{\mtpsymbol}{"C3}
1293 \fi\fi\fi
1294 %%
1295 \ifmst@LGRgreek % internal names for subdued implementation (1.15c-1.15e)
1296 \let\mst@origAlpha\Alpha
1297 \let\mst@origBeta\Beta
1298 \let\mst@origGamma\Gamma
1299 \let\mst@origDelta\Delta
1300 \let\mst@origEpsilon\Epsilon
1301 \let\mst@origZeta\Zeta
1302 \let\mst@origEta\Eta
1303 \let\mst@origTheta\Theta
1304 \let\mst@origIota\Iota
1305 \let\mst@origKappa\Kappa
1306 \let\mst@origLambda\Lambda
1307 \let\mst@origMu\Mu
1308 \let\mst@origNu\Nu
1309 \let\mst@origXi\Xi
1310 \let\mst@origOmicron\Omicron
1311 \let\mst@origPi\Pi
1312 \let\mst@origRho\Rho

```

```

1313 \let\mst@origSigma\Sigma
1314 \let\mst@origTau\Tau
1315 \let\mst@origUpsilon\Upsilon
1316 \let\mst@origPhi\Phi
1317 \let\mst@origChi\Chi
1318 \let\mst@origPsi\Psi
1319 \let\mst@origOmega\Omega
1320 %
1321 \let\mst@origalpha\alpha
1322 \let\mst@origbeta\beta
1323 \let\mst@origgamma\gamma
1324 \let\mst@origdelta\delta
1325 \let\mst@origepsilon\epsilon
1326 \let\mst@origzeta\zeta
1327 \let\mst@origeta\eta
1328 \let\mst@origtheta\theta
1329 \let\mst@origiota\iota
1330 \let\mst@origkappa\kappa
1331 \let\mst@origlambda\lambda
1332 \let\mst@origmu\mu
1333 \let\mst@orignu\nu
1334 \let\mst@origxi\xi
1335 \let\mst@origomicron\omicron
1336 \let\mst@origpi\pi
1337 \let\mst@origrho\rho
1338 \let\mst@origvarsigma\varsigma
1339 \let\mst@origsigma\sigma
1340 \let\mst@origtau\tau
1341 \let\mst@origupsilon\upsilon
1342 \let\mst@origphi\phi
1343 \let\mst@origchi\chi
1344 \let\mst@origpsi\psi
1345 \let\mst@origomega\omega
1346 \let\mst@origDigamma\Digamma
1347 \let\mst@origdigamma\digamma
1348 %%
1349 \def\mst@restoregreek{%
1350 \let\Alpha\mst@origAlpha
1351 \let\Beta\mst@origBeta
1352 \let\Gamma\mst@origGamma
1353 \let\Delta\mst@origDelta
1354 \let\Epsilon\mst@origEpsilon
1355 \let\Zeta\mst@origZeta
1356 \let\Eta\mst@origEta
1357 \let\Theta\mst@origTheta
1358 \let\Iota\mst@origIota
1359 \let\Kappa\mst@origKappa
1360 \let\Lambda\mst@origLambda
1361 \let\Mu\mst@origMu

```

```

1362 \let\Nu\mst@origNu
1363 \let\Xi\mst@origXi
1364 \let\Omicron\mst@origOmicron
1365 \let\Pi\mst@origPi
1366 \let\Rho\mst@origRho
1367 \let\Sigma\mst@origSigma
1368 \let\Tau\mst@origTau
1369 \let\Upsilon\mst@origUpsilon
1370 \let\Phi\mst@origPhi
1371 \let\Chi\mst@origChi
1372 \let\Psi\mst@origPsi
1373 \let\Omega\mst@origOmega
1374 %
1375 \let\alpha\mst@origalpha
1376 \let\beta\mst@origbeta
1377 \let\gamma\mst@origgamma
1378 \let\delta\mst@origdelta
1379 \let\epsilon\mst@origepsilon
1380 \let\zeta\mst@origzeta
1381 \let\eta\mst@origeta
1382 \let\theta\mst@origtheta
1383 \let\iota\mst@origiota
1384 \let\kappa\mst@origkappa
1385 \let\lambda\mst@origlambda
1386 \let\mu\mst@origmu
1387 \let\nu\mst@orignu
1388 \let\xi\mst@origxi
1389 \let\omicron\mst@origomicron
1390 \let\pi\mst@origpi
1391 \let\rho\mst@origrho
1392 \let\varsigma\mst@origvarsigma
1393 \let\sigma\mst@origsigma
1394 \let\tau\mst@origtau
1395 \let\upsilon\mst@origupsilon
1396 \let\phi\mst@origphi
1397 \let\chi\mst@origchi
1398 \let\psi\mst@origpsi
1399 \let\omega\mst@origomega
1400 \let\Digamma\mst@origDigamma
1401 \let\digamma\mst@origdigamma
1402 }
1403 %%
1404 \def\mst@setuplgrgreek{%
1405 \let\Alpha\mst@Alpha
1406 \let\Beta\mst@Beta
1407 \let\Gamma\mst@Gamma
1408 \let\Delta\mst@Delta
1409 \let\Epsilon\mst@Epsilon
1410 \let\Zeta\mst@Zeta

```

```

1411 \let\Eta\mst@Eta
1412 \let\Theta\mst@Theta
1413 \let\Iota\mst@Iota
1414 \let\Kappa\mst@Kappa
1415 \let\Lambda\mst@Lambda
1416 \let\Mu\mst@Mu
1417 \let\Nu\mst@Nu
1418 \let\Xi\mst@Xi
1419 \let\Omicron\mst@Omicron
1420 \let\Pi\mst@Pi
1421 \let\Rho\mst@Rho
1422 \let\Sigma\mst@Sigma
1423 \let\Tau\mst@Tau
1424 \let\Upsilon\mst@Upsilon
1425 \let\Phi\mst@Phi
1426 \let\Chi\mst@Chi
1427 \let\Psi\mst@Psi
1428 \let\Omega\mst@Omega
1429 %
1430 \let\alpha\mst@alpha
1431 \let\beta\mst@beta
1432 \let\gamma\mst@gamma
1433 \let\delta\mst@delta
1434 \let\epsilon\mst@epsilon
1435 \let\zeta\mst@zeta
1436 \let\eta\mst@eta
1437 \let\theta\mst@theta
1438 \let\iota\mst@iota
1439 \let\kappa\mst@kappa
1440 \let\lambda\mst@lambda
1441 \let\mu\mst@mu
1442 \let\nu\mst@nu
1443 \let\xi\mst@xi
1444 \let\omicron\mst@omicron
1445 \let\pi\mst@pi
1446 \let\rho\mst@rho
1447 \let\varsigma\mst@varsigma
1448 \let\sigma\mst@sigma
1449 \let\tau\mst@tau
1450 \let\upsilon\mst@upsilon
1451 \let\phi\mst@phi
1452 \let\chi\mst@chi
1453 \let\psi\mst@psi
1454 \let\omega\mst@omega
1455 \let\Digamma\mst@Digamma
1456 \let\digamma\mst@digamma
1457 }
1458 %%
1459 \DeclareMathSymbol{\mst@Alpha}{\mathalpha}{mtlgrfontupper}{65}

```



```

1460 \DeclareMathSymbol{\mst@Beta}{\mathalpha}{mtlgrfontupper}{66}
1461 \DeclareMathSymbol{\mst@Gamma}{\mathalpha}{mtlgrfontupper}{71}
1462 \DeclareMathSymbol{\mst@Delta}{\mathalpha}{mtlgrfontupper}{68}
1463 \DeclareMathSymbol{\mst@Epsilon}{\mathalpha}{mtlgrfontupper}{69}
1464 \DeclareMathSymbol{\mst@Zeta}{\mathalpha}{mtlgrfontupper}{90}
1465 \DeclareMathSymbol{\mst@Eta}{\mathalpha}{mtlgrfontupper}{72}
1466 \DeclareMathSymbol{\mst@Theta}{\mathalpha}{mtlgrfontupper}{74}
1467 \DeclareMathSymbol{\mst@Iota}{\mathalpha}{mtlgrfontupper}{73}
1468 \DeclareMathSymbol{\mst@Kappa}{\mathalpha}{mtlgrfontupper}{75}
1469 \DeclareMathSymbol{\mst@Lambda}{\mathalpha}{mtlgrfontupper}{76}
1470 \DeclareMathSymbol{\mst@Mu}{\mathalpha}{mtlgrfontupper}{77}
1471 \DeclareMathSymbol{\mst@Nu}{\mathalpha}{mtlgrfontupper}{78}
1472 \DeclareMathSymbol{\mst@Xi}{\mathalpha}{mtlgrfontupper}{88}
1473 \DeclareMathSymbol{\mst@Omicron}{\mathalpha}{mtlgrfontupper}{79}
1474 \DeclareMathSymbol{\mst@Pi}{\mathalpha}{mtlgrfontupper}{80}
1475 \DeclareMathSymbol{\mst@Rho}{\mathalpha}{mtlgrfontupper}{82}
1476 \DeclareMathSymbol{\mst@Sigma}{\mathalpha}{mtlgrfontupper}{83}
1477 \DeclareMathSymbol{\mst@Tau}{\mathalpha}{mtlgrfontupper}{84}
1478 \DeclareMathSymbol{\mst@Upsilon}{\mathalpha}{mtlgrfontupper}{85}
1479 \DeclareMathSymbol{\mst@Phi}{\mathalpha}{mtlgrfontupper}{70}
1480 \DeclareMathSymbol{\mst@Chi}{\mathalpha}{mtlgrfontupper}{81}
1481 \DeclareMathSymbol{\mst@Psi}{\mathalpha}{mtlgrfontupper}{89}
1482 \DeclareMathSymbol{\mst@Omega}{\mathalpha}{mtlgrfontupper}{87}
1483 %
1484 \DeclareMathSymbol{\mst@alpha}{\mathalpha}{mtlgrfontlower}{97}
1485 \DeclareMathSymbol{\mst@beta}{\mathalpha}{mtlgrfontlower}{98}
1486 \DeclareMathSymbol{\mst@gamma}{\mathalpha}{mtlgrfontlower}{103}
1487 \DeclareMathSymbol{\mst@delta}{\mathalpha}{mtlgrfontlower}{100}
1488 \DeclareMathSymbol{\mst@epsilon}{\mathalpha}{mtlgrfontlower}{101}
1489 \DeclareMathSymbol{\mst@zeta}{\mathalpha}{mtlgrfontlower}{122}
1490 \DeclareMathSymbol{\mst@eta}{\mathalpha}{mtlgrfontlower}{104}
1491 \DeclareMathSymbol{\mst@theta}{\mathalpha}{mtlgrfontlower}{106}
1492 \DeclareMathSymbol{\mst@iota}{\mathalpha}{mtlgrfontlower}{105}
1493 \DeclareMathSymbol{\mst@kappa}{\mathalpha}{mtlgrfontlower}{107}
1494 \DeclareMathSymbol{\mst@lambda}{\mathalpha}{mtlgrfontlower}{108}
1495 \DeclareMathSymbol{\mst@mu}{\mathalpha}{mtlgrfontlower}{109}
1496 \DeclareMathSymbol{\mst@nu}{\mathalpha}{mtlgrfontlower}{110}
1497 \DeclareMathSymbol{\mst@xi}{\mathalpha}{mtlgrfontlower}{120}
1498 \DeclareMathSymbol{\mst@omicron}{\mathalpha}{mtlgrfontlower}{111}
1499 \DeclareMathSymbol{\mst@pi}{\mathalpha}{mtlgrfontlower}{112}
1500 \DeclareMathSymbol{\mst@rho}{\mathalpha}{mtlgrfontlower}{114}
1501 \DeclareMathSymbol{\mst@varsigma}{\mathalpha}{mtlgrfontlower}{99}
1502 \DeclareMathSymbol{\mst@sigma}{\mathalpha}{mtlgrfontlower}{115}
1503 \DeclareMathSymbol{\mst@tau}{\mathalpha}{mtlgrfontlower}{116}
1504 \DeclareMathSymbol{\mst@upsilon}{\mathalpha}{mtlgrfontlower}{117}
1505 \DeclareMathSymbol{\mst@phi}{\mathalpha}{mtlgrfontlower}{102}
1506 \DeclareMathSymbol{\mst@chi}{\mathalpha}{mtlgrfontlower}{113}
1507 \DeclareMathSymbol{\mst@psi}{\mathalpha}{mtlgrfontlower}{121}
1508 \DeclareMathSymbol{\mst@omega}{\mathalpha}{mtlgrfontlower}{119}

```

```

1509 \DeclareMathSymbol{\mst@digamma}{\mathalpha}{mtlgrfontlower}{147}
1510 \DeclareMathSymbol{\mst@Digamma}{\mathalpha}{mtlgrfontlower}{195}
1511 % cf http://milde.users.sourceforge.net/LGR/lgrxenc.def.html
1512 % et greek.ldf du package babel
1513 \ifmst@subdued\else\mst@setuplgrgreek\fi
1514 \fi

```

\inodot In v1.0, I had them of type mathord, here I choose mathalpha. If I used \i and \jnodot \j from the text font the problem would be with the fontsize, if in scriptstyle. The amsmath \text would do the trick. v1.14b (2011/04/02): again this bug in the EU1/EU2 encoding part, as in the code redefining \$ etc in math mode (see above). Fixed.

```

1515 \edef\mst@tmp@enc{\encodingdefault}
1516 \mst@goaheadtrue
1517 \ifx\mst@tmp@enc\mst@eui % xetex and unicode font
1518 \XeTeXmathchardef\inodot="7 \symmtletterfont "0131 \relax
1519 \XeTeXmathchardef\jnodot="7 \symmtletterfont "0237 \relax
1520 \else
1521 \ifx\mst@tmp@enc\mst@euii % luatex and unicode font
1522 \luatexUmathchardef\inodot="7 \symmtletterfont "0131 \relax
1523 \luatexUmathchardef\jnodot="7 \symmtletterfont "0237 \relax
1524 \else
1525 \ifx\mst@tmp@enc\mst@ti % T1
1526 \DeclareMathSymbol{\inodot}{\mathalpha}{mtletterfont}{25}
1527 \DeclareMathSymbol{\jnodot}{\mathalpha}{mtletterfont}{26}
1528 \else
1529 \ifx\mst@tmp@enc\mst@oti % OT1
1530 \DeclareMathSymbol{\inodot}{\mathalpha}{mtletterfont}{16}
1531 \DeclareMathSymbol{\jnodot}{\mathalpha}{mtletterfont}{17}
1532 \else
1533 \ifx\mst@tmp@enc\mst@lyi % LY1
1534 \DeclareMathSymbol{\inodot}{\mathalpha}{mtletterfont}{16}
1535 \DeclareMathSymbol{\jnodot}{\mathalpha}{mtletterfont}{17}
1536 \else
1537 \ifXeTeX\mst@goaheadfalse\else\ifLuaTeX\mst@goaheadfalse\else
1538 \DeclareMathSymbol{\inodot}{\mathalpha}{mtletterfont}
1539 {\expandafter\the\expandafter\csname\mst@tmp@enc\string\i\endcsname}
1540 \DeclareMathSymbol{\jnodot}{\mathalpha}{mtletterfont}
1541 {\expandafter\the\expandafter\csname\mst@tmp@enc\string\j\endcsname}
1542 \fi\fi
1543 \fi\fi\fi\fi\fi
1544 \ifmst@defaultimath\else
1545 \ifmst@goahead
1546 \renewcommand{\imath}{\inodot}
1547 \renewcommand{\jmath}{\jnodot}
1548 \let\mst@oldi\i \let\mst@oldj\j
1549 \DeclareRobustCommand{\i}{\ifmmode\inodot\else\mst@oldi\fi}
1550 \DeclareRobustCommand{\j}{\ifmmode\jnodot\else\mst@oldj\fi}

```

```

1551 \fi
1552 \fi

```

math accents I don't know how to get from the encoding to the slot positions of the accents (apart from going to look at all possible encodings definition files and putting this info here). In standard L^AT_EX, the mathaccents are taken from the 'operators' font. So we do the same here. Of course there is the problem that the user can define math versions with different encodings. Here I take T1 if it was the default at the time of loading the package, else OT1. v1.12b: I add LY1 which is quasi like OT1

```

1553 \edef\mst@tmp@enc{\encodingdefault} %% rather one too many than sorry
1554 \ifmst@mathaccents
1555 \ifx\mst@ti\mst@tmp@enc
1556 \DeclareMathAccent{\acute}{\mathalpha}{mtoperatorfont}{1}
1557 \DeclareMathAccent{\grave}{\mathalpha}{mtoperatorfont}{0}
1558 \DeclareMathAccent{\ddot}{\mathalpha}{mtoperatorfont}{4}
1559 \DeclareMathAccent{\tilde}{\mathalpha}{mtoperatorfont}{3}
1560 \DeclareMathAccent{\bar}{\mathalpha}{mtoperatorfont}{9}
1561 \DeclareMathAccent{\breve}{\mathalpha}{mtoperatorfont}{8}
1562 \DeclareMathAccent{\check}{\mathalpha}{mtoperatorfont}{7}
1563 \DeclareMathAccent{\hat}{\mathalpha}{mtoperatorfont}{2}
1564 \DeclareMathAccent{\dot}{\mathalpha}{mtoperatorfont}{10}
1565 \DeclareMathAccent{\mathring}{\mathalpha}{mtoperatorfont}{6}
1566 \else
1567 \DeclareMathAccent{\acute}{\mathalpha}{mtoperatorfont}{19}
1568 \DeclareMathAccent{\grave}{\mathalpha}{mtoperatorfont}{18}
1569 \DeclareMathAccent{\ddot}{\mathalpha}{mtoperatorfont}{127}
1570 \DeclareMathAccent{\tilde}{\mathalpha}{mtoperatorfont}{126}
1571 \DeclareMathAccent{\bar}{\mathalpha}{mtoperatorfont}{22}
1572 \DeclareMathAccent{\breve}{\mathalpha}{mtoperatorfont}{21}
1573 \DeclareMathAccent{\check}{\mathalpha}{mtoperatorfont}{20}
1574 \DeclareMathAccent{\hat}{\mathalpha}{mtoperatorfont}{94}
1575 \DeclareMathAccent{\dot}{\mathalpha}{mtoperatorfont}{95}
1576 \DeclareMathAccent{\mathring}{\mathalpha}{mtoperatorfont}{23}
1577 \ifx\mst@lyi\mst@tmp@enc % LY1 encoding
1578 \DeclareMathAccent{\dot}{\mathalpha}{mtoperatorfont}{5}
1579 \else
1580 \ifx\mst@oti\mst@tmp@enc\else
1581 \typeout{** mathastext: math accents have been assumed to be^^J%
1582 ** as in OT1 encoding.}
1583 \fi
1584 \fi
1585 \fi\fi

```

Math sizes I took the code for \Huge and \HUGE from the moresize package of Christian CORNELSEN

```

1586 \ifmst@defaultsizes\else
1587 \providecommand\@xxxpt{29.86}
1588 \providecommand\@xxxvpt{35.83}

```

```

1589 \ifmst@twelve
1590   \def\Huge{\@setfontsize\Huge\@xxxpt{36}}
1591   \def\HUGE{\@setfontsize\HUGE\@xxxvpt{43}}
1592 \typeout{** \protect\Huge\space and \protect\HUGE\space have been (re)-defined.}
1593 \else
1594   \def\HUGE{\@setfontsize\HUGE\@xxxpt{36}}
1595 \typeout{** \protect\HUGE\space has been (re)-defined.}
1596 \fi

```

I choose rather big subscripts.

```

1597 \def\defaultscriptratio{.8333}
1598 \def\defaultscriptscriptratio{.7}
1599 \DeclareMathSizes{9}{9}{7}{5}
1600 \DeclareMathSizes{\@xpt}{\@xpt}{8}{6}
1601 \DeclareMathSizes{\@xipt}{\@xipt}{9}{7}
1602 \DeclareMathSizes{\@xipt}{\@xipt}{10}{8}
1603 \DeclareMathSizes{\@xivpt}{\@xivpt}{\@xipt}{10}
1604 \DeclareMathSizes{\@xvipt}{\@xvipt}{\@xivpt}{\@xipt}
1605 \DeclareMathSizes{\@xxpt}{\@xxpt}{\@xvipt}{\@xivpt}
1606 \DeclareMathSizes{\@xxvpt}{\@xxvpt}{\@xxpt}{\@xvipt}
1607 \DeclareMathSizes{\@xxxpt}{\@xxxpt}{\@xxvpt}{\@xxpt}
1608 \DeclareMathSizes{\@xxxvpt}{\@xxxvpt}{\@xxxpt}{\@xxvpt}
1609 \typeout{** mathastext has declared larger sizes for subscripts.^~J%}
1610 ** To keep LaTeX defaults, use option 'defaultmathsizes'.}
1611 \fi

```

Scaling mechanism for the Symbol font.

```

1612 \AtBeginDocument{
1613 \ifmst@needsymbol
1614   \DeclareFontFamily{U}{psy}{ }
1615   \DeclareFontShape{U}{psy}{m}{n}{<->s*[\psy@scale] psy}{ }
1616 \fi}

```

\exists

```

\forall 1617 \let\mst@stdexists\exists % must be at end of code
1618 \let\mst@stdforall\forall
1619 \renewcommand\exists{\mst@stdexists\mskip\mst@exists@muskip}
1620 \renewcommand\forall{\mst@stdforall\mskip\mst@forall@muskip}

```

subdued v1.15: the subdued option (second half of the implementation).

```

1621 \ifmst@subdued
1622 \typeout{** ...entering subdued mode...}
1623 \expandafter\SetSymbolFont@ \expandafter\mv@normal\mst@normalmv@letter\symmtletterfont
1624 \expandafter\SetSymbolFont@ \expandafter\mv@bold\mst@boldmv@letter\symmtletterfont
1625 \expandafter\SetSymbolFont@ \expandafter\mv@normal\mst@normalmv@operator\symmtoperatorfont
1626 \expandafter\SetSymbolFont@ \expandafter\mv@bold\mst@boldmv@operator\symmtoperatorfont
1627 \typeout{** ...done.}
1628 \fi

1629 \endinput

```