

The `mathastext` package

Jean-François BURNOL
jfbu at free dot fr

Abstract

The `mathastext` package¹ propagates the document *text* font to *mathematical* mode, for the letters and digits of the Latin alphabet and a few further characters. Various possibilities are provided for Greek letters, including picking them up in the font itself, if the font is available in LGR-encoding. The initial idea was to produce handouts or research papers with a less book-like typography than what is typical of standard \TeX - \LaTeX with the Computer Modern fonts, but equipped with a very uniform look (with the hope to coerce the reader into concentrating more onto the contents ;-).) A side-effect is that 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 (not that we recommend it!). A final aspect is that `mathastext` helps sometimes produce smaller PDF files.

Numerous examples are available here:
<http://jf.burnol.free.fr/mathastext.html>

1 Description of what the package does

1.1 Motivation

`mathastext` was conceived as a result of frustration of distributing to students \TeX -crafted mathematical handouts with a subsequent realization that not much had made it to a semi-permanent brain location. So, I forced \LaTeX to produce material as if written on a primitive typewriter, a little bit like the good old seminar notes of the Cartan and Grothendieck days. Don't ask me if this helped, I have long since opted for a positive attitude in life.

The package `mathastext` is less extreme, but retains the idea of using inside mathematics the same font as is used for text for the letters of the Latin alphabet and the digits:

abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
0123456789

By default the text font will also be used for:

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

Note: if the package detects OT1 as default encoding it will take out from the list $\langle \rangle | \{ \}$ and \backslash as they are not available in OT1, except for the typewriter fonts; the option `alldelims` forces re-integration in this case.

The commands `\mathnormal`, `\mathrm` and `\mathbf` are modified to now make use of the text font; but nothing is changed to `\mathit` and the other math alphabet commands which will use the default math fonts, not the text font.

The en-dash (–) is used for the minus sign, rather than the hyphen (-) character. Additionally, some further glyphs will also be picked up in the text font: the dotless

¹This document describes `mathastext` version 1.13b (2011/03/15).

i and j, the hbar and the math accents. Version 1.12 brought a better compatibility with a Unicode setting (assuming that `fontspec` is made use of), but the scope of `mathastext` does not include letters with diacritics such as é, à, ö in math mode. Users of Unicode engines and fonts are advised to look at the `mathspec` and `unicode-math` packages which have a much wider scope than `mathastext`.

Even when typesetting simple mathematics, some glyphs (almost) must be taken from the default math fonts: in particular the prime ' for derivatives, as the text font ' is not, as a rule, a satisfying alternative. Also, the package does nothing regarding the large math symbols (except for \prod and \sum in inline math who, like here: $\prod \sum$, will be taken from the Symbol Font if option `symbolmisc` is passed to the package).

1.2 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, I explained above why I did this on purpose.

Nevertheless, soon after I posted the initial version of the package to CTAN, I was overwhelmed by numerous² questions³ on how to have the letters be in italic shape.

Starting with version 1.1 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 italic Latin letters in math mode. There is also an option `frenchmath`⁴ to make the uppercase letters nevertheless upright, because this is the way of traditional French mathematical typography.

1.3 Greek letters

The Computer Modern fonts are very light 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`:

`<—>`: 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.⁵ The letters (but see below) will be in the same shape as the Latin letters, or upright in case of the option `frenchmath`.

eulergreek: the Greek letters will be taken from the Euler font which is included in all L^AT_EX distributions (although no package loading is necessary for the user,

²this means "more than one."

³I thank in particular Tariq PERWEZ and Kevin KLEMENT for their kind remarks (chronological order).

⁴in versions of the package prior to 1.13, it was necessary to also pass the option `italic` to enable `frenchmath`. This is now superfluous.

⁵among examples known to the author are the Comfortaa and the Droid (serif and sans) fonts, and of course the Greek Font Society fonts such as GFS Didot.

nor done by `mathastext`, the file `uzeur.fd` from the `eulervm` package must be accessible to L^AT_EX 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) Symbol font. A command is provided so that the user can scale the Symbol font to let it better mix with the text font. The letters are upright.

selfGreek: this option has limited use; it is for OT1-encoded text fonts which do provide the glyphs for the capital Greek letters. It does nothing for the lowercase Greek letters.

1.3.1 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 font are not available in italic shape, so this raises issues only in the case of the options `LGRgreek` and `selfGreek`. The `mathastext` default is to let the Greek letters have the same shape as the Latin letters (and be upright in the case of option `frenchmath`.)

A finer control is provided by options `upgreek`, `itgreek`, `upGreek`, `itGreek`: the former first two control both lower- and uppercase, the latter control only the uppercase shape. So classic T_EX is `itgreek+upGreek`, ISO is `itgreek`, and French is `upgreek`.

Note that, as mentioned before, the options `italic` and `frenchmath` act on both Latin and Greek letters, so `italic` gives ISO behavior, and `frenchmath` gives French behavior,⁶ without need to use the `[up|it][g|G]reek` options.

Again, all of this applies only in case of option `LGRgreek` and to a lesser extent, `selfGreek`. And to recapitulate, people wanting the classic T_EX behavior will use `italic+upGreek`, or `itgreek+upGreek` in the absence of `italic`.

1.4 Advanced use: math versions

It is not infrequent to use two different text fonts in the same document. In the context of the `mathastext` design goals it was thus necessary to find a way to let changes of the text font also propagate to math mode. For this the package extends the L^AT_EX mechanism of math versions. However this is only for Latin letters, digits, and the other characters mentioned above, but not for Greek letters: the choice of a Greek-related option (or none) at the time of loading the package will affect all math versions. This does mean though that in the case of the `LGRgreek` option changing the text font will also change the font for the Greek letters. But it is not possible (in the current version of the package) to have one part of the document use the Euler font for Greek letters and another part use the Symbol font (it is possible to use both fonts simultaneously but Symbol will then be employed for various mathematical symbols, not for Greek, see option `symbolmax`).

⁶In fact, `frenchmath` confers to the Greek letters and uppercase Latin letters the same shape as to the operator-names and digits, so generally speaking this will be the `\shapedefault` at the time of loading the package. If this shape is not the upright one and one still wants upright Greek, then it is thus necessary to use `upgreek`.

Let us now see a small document using four math versions:

```
\documentclass{minimal}
\usepackage[T1]{fontenc}
\usepackage{mathastext}
% declares Latin Modern Typewriter Proportional:
\MTDeclareVersion{lmvtt}{T1}{lmvtt}{m}{n}
% declares Baskervald, italic letters in math:
\MTDeclareVersion[it]{baskervald}{T1}{ybv}{m}{n}
% declares Helvetica-Bold-Slanted, but upright
% letters in math mode:
\MTDeclareVersion[n]{helvetica}{T1}{phv}{b}{sl}
\begin{document}
\MTVersion{helvetica}
Bold-slanted Helvetica in text,
\upright\ Helvetica\ in\ math$.\
\MTVersion[lmvtt]{baskervald}
Text in lmvtt but  $\ in\ Baskervald-Italic$.\$ 
\MTVersion{normal}
The normal version uses the default text font at
the time of loading mathastext,  $\ in\ math\ also\ of\ course$.$ 
\end{document}
```

The encodings of the various `mathastext`-defined versions can be arbitrary; but as `mathastext` decides at the time when it is loaded where to look for things like the en-dash, or the dotless i and j, or the math accents, which are encoding-dependent, there are obviously some limitations to the use of these things in more than one math version.

The package provides various macros to interface with its ‘math versions’ functionalities. These commands are detailed in a later section. As an example, here is an equivalent manner to set up our small document:

```
\documentclass{minimal}
\usepackage[T1]{fontenc}
\usepackage{mathastext}
\renewcommand{\rmdefault}{lmvtt}
\Mathastext[lmvtt] % Declares the ‘lmvtt’ version
\renewcommand{\rmdefault}{ybv}
\MTlettershape{it}
\Mathastext[baskervald] % Declares the ‘baskervald’ version
\renewcommand{\shapedefault}{sl}
\renewcommand{\rmdefault}{phv}
\renewcommand{\mddefault}{b}
\MTlettershape{n}
\Mathastext[helvetica] % Declares the ‘helvetica’ version
\begin{document}
\MTVersion{helvetica} % use ‘helvetica’ both in text and math
Bold-slanted Helvetica in text, \upright\ Helvetica\ in\ math$.\
\MTVersion[lmvtt]{baskervald}
Text in lmvtt but  $\ in\ Baskervald-Italic$.\$ 
\MTVersion{normal}
The normal version uses the default text font at
the time of loading mathastext,  $\ in\ math\ also\ of\ course$.$ 
```

```
\end{document}
```

Unicode TeX engines and fonts can also be accommodated. It is recommended to load the package `fontspec`. Of course `mathastext` is extremely far from really defining a math font, as it applies basically only to a subset of the 32-127 ascii range. And it does not know how to use a given Unicode font simultaneously for Latin and Greek letters: interested people are advised to look at packages `mathspec` and `unicode-math`. Here is an example (a bit schizophrenic) of a document with `mathastext`-versions for a XeTeX or LuaLaTeX user:

```
\documentclass{minimal}
\usepackage[no-math]{fontspec}
\setmainfont{comfortaa}
\usepackage{mathastext} % the normal version uses Comfortaa
\setmainfont{TeX Gyre Pagella}
\Mathastext[pagella] % the pagella version uses
                    % TeX Gyre Pagella
\MTDeclareVersion{times}{T1}{ptm}{m}{n}
% this is a T1-encoded URW Times.
% Do not use this interface for a Unicode font,
% use rather as above the \setmainfont
% command of |fontspec|, followed by \Mathastext
\setmainfont{TeX Gyre Schola}
\Mathastext[schola] % and the schola version uses
                  % unicode TeX Gyre Schola

\begin{document}
\MTVersion{pagella}
This is in TeX Gyre Pagella $and\ this\ also$ (unicode font).
\MTVersion{times}
Now we are in URW Times, $here\ also$ (T1 encoded font).
\MTVersion[normal]{schola}
Text in Unicode Comfortaa and $math\ in\ Unicode\ Schola$.
\end{document}
```

1.5 Main options

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

`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 listed supra, other than letters and digits, are taken from the Symbol font. This option also makes a number of further glyphs available, including some basic mathematical arrows, as well as 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`: the package `mathastext` opts for bigger subscripts (and, copied from the `moresize` package, redefines `\Huge` and defines `\HUGE`). Use this option to prevent it from doing so.

1.6 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).

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).

Xe \TeX and Lua \TeX : for the en-dash and the dotless `i` and `j`, the package expects to detect either the EU1 encoding for Xe \TeX or the EU2 encoding for Lua \TeX (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 Pdf \LaTeX , there is no such limitation and all 8bit-encodings (containing these glyphs) should be ok.

fontspec: one more note to users of Xe \TeX /Lua \TeX 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, 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: The `\mathnormal`, `\mathrm`, and `\mathbf` are modified to use the text font (or the arbitrarily specified font for a math version), and behave as in standard \LaTeX . But we provide a new `\mathnormalbold`, to access the bold letters while maintaining their italic shape (or whatever shape has been specified for them) in case of the `italic` option. Other math alphabet changing commands are `\MathEulerBold`, `\MathEuler` and `\MathPSymbol`. Note though that it is not possible to use too many of such commands in the

same document, due to some limitations of L^AT_EX. Declaring them does not seem to be a problem, and I will welcome any information by knowledgeable people.

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 by `mathastext` at the time it is loaded. 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.

2 Commands

2.1 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`: reinitializes `mathastext` according to the current defaults of encoding, family, series and shape.
 - It can also be preceded optionally by one or more of⁷ `\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.
 - 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.
- `\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 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

⁷these commands exist also with long names: `\Mathastextencoding`, etc. . . The same applies to the other commands mentioned in this section.

in fact be in caps and small caps (and bold).⁸ When the optional argument is absent, and `mathastext` was loaded with the `italic` option, then the default letter shape will be `it`,⁹ 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.
- `\MTEulerScale{<factor>}`: scales the Euler font by `<factor>`.
- `\MTSymbolScale{<factor>}`: scales the Symbol font by `<factor>`.

2.2 Body Text and Math commands

- `\MTVersion[<nametext>]{<namemath>}`:¹⁰ in the absence of the optional argument changes simultaneously the text and the math font to be the font corresponding to the version `<namemath>`. If there is an optional argument then the text font will use `<nametext>` and the math mode will use `<namemath>`. To change only the math font, use the L^AT_EX command `\mathversion`.

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`: suitable modifications of the original `\mathnormal`, `\mathrm`, `\mathbf`. By default, the originals are also overwritten by the new commands.
- `\mathnormalbold`: a bold version of `\mathnormal`.
- `\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.
- `\MathEuler`, `\MathEulerBold`: math alphabets to access all the glyphs of the Euler font, if option `eulergreek` (or `eulerdigits`) was passed to the package.

⁸I do not especially recommend to use this in real life!

⁹more 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.

¹⁰`\MTVersion` is also available as `\MTversion`.

- `\MathPSymbol`: math alphabet to access the Symbol font.
- Capital Greek letters: macro names `\Digamma`, `\Alpha`, `\Beta`, `\Epsilon`, `\Zeta`, `\Eta`, `\Iota`, `\Kappa`, `\Mu`, `\Nu`, `\Omicron`, `\Rho`, `\Tau`, `\Chi` are provided for the capital Greek letters which look like their Latin counterparts, when one of the options `symbolgreek` (no `\Digamma` for Symbol), `eulergreek` or `selfGreek` was passed to the package. Also an `\omicron` control sequence is provided.
- LGR Greek and ‘var’-letters: only the `\varsigma` is from the font, others such as `\varphi` will load the previous default math font. So when re-compiling a previously written document it might be suitable to `\let\varphi=\phi`, `\let\varepsilon=\epsilon`, etc..., when only the ‘variant’ form of the letter was used therein.
- 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 `\shortiff` \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 `\proptopsy` \propto `\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 `\angle` \angle `\rangle` \rangle . And a `\DotTriangle` \therefore is made available by option `symbolre` (which overwrites `\Re` and `\Im`: \Re, \Im). The `\infty` and `\proptopsy` have these names to leave up to the user the choice to replace (or no) with them the original (larger) `\infty` and `\propto`.

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

$$\prod \sum$$

The package provides `\prodpsy` and `\sumpsy`: if one really wants in all situations the Symbol glyphs, one can do `\let\prod\prodpsy` and `\let\sum\sumpsy`. Also `\defaultprod` and `\defaultsum` will refer to the `\prod` and `\sum` before redefinition by the package.

3 Complete list of options

- **basic**: only mathastextify letters and digits.
- **italic**: the letters will default to italic shape in math mode.
- **frenchmath**: *italic*, 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, this generally upright shape will be applied also to 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** `, . : ;` **noplus**, **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.
- **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 `(.)`.
- **symbolmisc**: takes quite a few glyphs, including logical arrows, product and sum signs from Symbol. They are listed *supra*.. You may also consider `\renewcommand{\int}{\smallint}` to maximize still 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.
- **selfGreek**: this is for a font which has the capital Greek letters at the OT1 slot positions.
- **upgreek, itgreek, upGreek, itGreek**: optional specification of the shapes of the Greek letters, or only of the uppercase Greek letters. Only operant in the case of the **LGRgreek** and **selfGreek** 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.
- **defaultrm, defaultbf, defaultnormal**: do not overwrite the default `\mathrm`, `\mathbf`, `\mathnormal`.

- `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.
- `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 bug reports and feature requests.

4 Commented source code

```
1 \NeedsTeXFormat{LaTeX2e}
2 \ProvidesFile{mathastext.sty}
3 [2011/03/15 1.13b Use the text font in simple mathematics]
```

I copied these macros from the `iftex` package of Vafa KHALIGHI. Perhaps I should rather require the package?

```
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
```

We turn off the official loggings as we intend to write our owns

```
18 \def\mt@font@info@off{
19 \let\m@stext@info\@font@info
20 \let\m@stext@warning\@font@warning
21 \let\@font@info\@gobble
22 \let\@font@warning\@gobble}
23 \def\mt@font@info@on{
24 \let\@font@info\m@stext@info
25 \let\@font@warning\m@stext@warning}
26 \mt@font@info@off
```

Internal variables. Will be redefined with `\def` later.

```
\m@stextenc
\m@stextfam
\m@stextser
\m@stextsh
\m@stextbold
\m@stextshletter
27 \edef\m@stextenc{\encodingdefault}
28 \edef\m@stextfam{\familydefault}
29 \edef\m@stextser{\seriesdefault}
30 \edef\m@stextsh{\shapedefault}
31 \edef\m@stextbold{\bfdefault}
32 \edef\m@stextshletter{\shapedefault}
33 \newif\ifmt@proceed
34 \newif\ifmt@failed
```

March 9, 2011: v1.13 introduces the option LGRgreek; and I make systematic use of `\if...` conditionals, for better readability of the code and error checking (too late for that!), although this means using a bit more of TeX resources.

```
35 \def\mt@oti{OT1}\def\mt@ti{T1}
36 \def\mt@eui{EU1}\def\mt@euii{EU2}
37 \def\mt@lyi{LY1}
```

Package options

```
38 \newif\ifmt@italic\DeclareOption{italic}{\mt@italictrue
39       \edef\m@stextshletter{\itdefault}}
40 \newif\ifmt@frenchmath
41 \DeclareOption{frenchmath}{\mt@frenchmathtrue
42       \ExecuteOptions{italic}}
43 %%
44 \newif\ifmt@endash\mt@endashtrue
45 \DeclareOption{endash}{\mt@endashtrue}
46 \DeclareOption{noendash}{\mt@endashfalse}
47 \newif\ifmt@emdash\DeclareOption{emdash}{\mt@emdashtrue\mt@endashfalse}
48 %%
49 \newif\ifmt@alldelims
50 \DeclareOption{alldelims}{\mt@alldelimtrue}
51 \ifx\mt@oti\m@stextenc\else\mt@alldelimtrue\fi
52 \DeclareOption{nolessnomore}{\mt@alldelimsfalse}
53 %%
54 \newif\ifmt@noplus\DeclareOption{noplus}{\mt@noplustrue}
55 \newif\ifmt@nominus\DeclareOption{nominus}{\mt@nominustrue}
56 \DeclareOption{noplusnominus}{\ExecuteOptions{noplus,nominus}}
57 %%
58 \newif\ifmt@noparen\DeclareOption{noparenthesis}{\mt@noparenttrue}
59 \newif\ifmt@nopunct\DeclareOption{nopunctuation}{\mt@nopuncttrue}
60 \newif\ifmt@noequal\DeclareOption{noequal}{\mt@noequaltrue}
61 \newif\ifmt@noexclam\DeclareOption{noexclam}{\mt@noexclamtrue}
62 \newif\ifmt@noast\DeclareOption{noasterisk}{\mt@noastrue}
63 \newif\ifmt@nospecials\DeclareOption{nospecials}{\mt@nospecialstrue}
64 \DeclareOption{basic}{\ExecuteOptions{noparenthesis,nopunctuation,%
65 noplusnominus,noequal,noexclam,noasterisk,nospecials,nolessnomore}}
66 %%
67 \newif\ifmt@nohbar\DeclareOption{nohbar}{\mt@nohbartrue}
68 \newif\ifmt@nodigits\DeclareOption{nodigits}{\mt@nodigitstrue}
69 \newif\ifmt@defaultimath\DeclareOption{defaultimath}{\mt@defaultimathtrue}
70 \newif\ifmt@mathaccents\DeclareOption{mathaccents}{\mt@mathaccentstrue}
71 %%
72 \newif\ifmt@selfGreek
73       \DeclareOption{selfGreek}{\mt@selfGreektrue}
74       \DeclareOption{selfgreek}{\mt@selfGreektrue}
75 \newif\ifmt@LGRgreek\DeclareOption{LGRgreek}{\mt@LGRgreektrue}
76 %%
77 \newif\ifmt@needsymbol
78 \newif\ifmt@symboldelimiters
79 \DeclareOption{symboldelimiters}{\mt@needsymboltrue\mt@symboldelimiterstrue}
80 \newif\ifmt@symboldigits
81 \DeclareOption{symboldigits}{\mt@needsymboltrue\mt@symboldigitstrue}
82 \newif\ifmt@symbolgreek
```

```

83 \DeclareOption{symbolgreek}{\mt@needsymboltrue\mt@symbolgreektrue}
84 \newif\ifmt@symbolre
85 \DeclareOption{symbolre}{\mt@needsymboltrue\mt@symbolretrue}
86 \newif\ifmt@symbolmisc
87 \DeclareOption{symbolmisc}{\mt@needsymboltrue\mt@symbolmisctrue}
88 \DeclareOption{symbol}{\ExecuteOptions{symbolgreek,symbolmisc,symbolre}}
89 \DeclareOption{symbolmax}{\ExecuteOptions{symbol,symboldelimiters}}
90 %%
91 \newif\ifmt@needeuler
92 \newif\ifmt@eulerdigits
93 \DeclareOption{eulerdigits}{\mt@needeulertrue\mt@eulerdigitstrue}
94 \newif\ifmt@eulergreek
95 \DeclareOption{eulergreek}{\mt@needeulertrue\mt@eulergreektrue}
96 %%
97 \newif\ifmt@twoshapesforgreek
98 \newif\ifmt@upgreek
99 \newif\ifmt@itgreek
100 \newif\ifmt@upGreek
101 \newif\ifmt@itGreek
102 \DeclareOption{upgreek}{\mt@upgreektrue}
103 \DeclareOption{itgreek}{\mt@itgreektrue}
104 \DeclareOption{upGreek}{\mt@twoshapesforgreektrue\mt@upGreektrue}
105 \DeclareOption{itGreek}{\mt@twoshapesforgreektrue\mt@itGreektrue}
106 %%
107 \newif\ifmt@defaultnormal
108 \DeclareOption{defaultnormal}{\mt@defaultnormaltrue}
109 \newif\ifmt@defaultrm
110 \DeclareOption{defaultrm}{\mt@defaultrmtrue}
111 \newif\ifmt@defaultbf
112 \DeclareOption{defaultbf}{\mt@defaultbftrue}

We intend to change the default script and scriptscript sizes, and also to declare a
\HUGE size and modify the \Huge one at 12pt (taken from the moresize package).
So we have an option to maintain default situation.

113 \newif\ifmt@defaultsizes\DeclareOption{defaultmathsizes}{\mt@defaultsizestrue}
114 \newif\ifmt@twelve\DeclareOption{12pt}{\mt@twelvetrue}
115 \newif\ifmt@fouriervec\DeclareOption{fouriervec}{\mt@fouriervectrue}
116 \DeclareOption*{\PackageWarning{mathastext}{Unknown option '\CurrentOption'}}
117 %%
118 \ProcessOptions\relax

```

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 `\Mathastextwilluse`, 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.

```

119 \DeclareSymbolFont{mtoperatorfont}
120     {\m@stextenc}{\m@stextfam}{\m@stextser}{\m@stextsh}

```

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.

```

121 \DeclareSymbolFont{mtletterfont}

```

```

122      {\m@stextenc}{\m@stextfam}{\m@stextser}{\m@stextshletter}
123 \DeclareSymbolFontAlphabet{\Mathnormal}{mtletterfont}
124 \DeclareSymbolFontAlphabet{\Mathrm}{mtoperatorfont}

```

LGRgreek The LGRgreek option necessitates to define at least one additional symbol font
mtlgrfont mtlgrfont, and possibly a further one mtlgrfontupper for uppercase Greek.

```

mtlgrfontupper 125 \ifmt@LGRgreek
126   \DeclareFontEncoding{LGR}{-}{-}
127   \DeclareSymbolFont{mtlgrfont}{LGR}
128     {\m@stextfam}{\m@stextser}{\m@stextshletter}
129   \def\mtlgrfontupper{mtlgrfont}
130   \ifmt@twoshapesforgreek
131     \ifmt@upGreek
132       \DeclareSymbolFont{mtlgrfontupper}{LGR}{\m@stextfam}{\m@stextser}{n}
133     \else
134       \DeclareSymbolFont{mtlgrfontupper}{LGR}{\m@stextfam}{\m@stextser}{it}
135     \fi
136   \def\mtlgrfontupper{mtlgrfontupper}
137   \fi
138 \else

```

selfGreek We must also make provisions for a possible additional font for uppercase Greek,
mtselffontupper in the case of the option selfGreek, when the shape is not necessarily \m@stextsh
\mt@uppergreekfont (that is \shapedefault).

```

139 \ifmt@selfGreek\mt@proceedfalse
140   \ifmt@upGreek\def\mt@tmp{n}\mt@proceedtrue\else
141   \ifmt@upgreek\def\mt@tmp{n}\mt@proceedtrue\else
142   \ifmt@itGreek\def\mt@tmp{it}\mt@proceedtrue\else
143   \ifmt@itgreek\def\mt@tmp{it}\mt@proceedtrue
144   \fi\fi\fi\fi
145   \ifmt@proceed
146     \def\mt@uppergreekfont{mtselffontupper}
147     \DeclareSymbolFont{mtselffontupper}{\m@stextenc} % should be OT1!
148       {\m@stextfam}{\m@stextser}{\mt@tmp}
149   \else
150     \ifmt@frenchmath
151       \def\mt@uppergreekfont{mtoperatorfont}
152     \else
153       \def\mt@uppergreekfont{mtletterfont}
154     \fi

```

Used to be mtoperatorfont in versions prior to 1.13, so typically upright. Not the case anymore (in the case of option italic for example), to comply to ISO standard. Use upGreek if necessary.

```

155   \fi
156 \fi\fi

```

mteulervm In case we need the Euler font, we declare it here. It will use `uzeug.f.d` from the
\MathEuler eulervm package of Walter SCHMIDT

```

157 \ifmt@needeuler
158 \DeclareSymbolFont{mteulervm}{U}{zeug}{m}{n}
159 \DeclareSymbolFontAlphabet{\MathEuler}{mteulervm}
160 \fi

```



```

175 \DeclareSymbolFont{mtfourierpourvec}{FML}{futm}{m}{it}
176 \SetSymbolFont{mtfourierpourvec}{bold}{FML}{futm}{b}{it}
177 \DeclareMathAccent{\fouriervec}{\mathord}{mtfourierpourvec}{"7E}
178 \fi

```

\MTencoding Some public macros to modify our private internals, and we will use them also
\MTfamily ourself.
\MTseries In version 1.1 we add the possibility to have two distinct font shapes for letters
\MTshape and digits. So in fact we could as well have two really unrelated fonts but this is
\MTboldvariant really not the spirit of the package.

```

\MTlettershape 179 \DeclareRobustCommand\MTencoding[1]{\def\m@stextenc{#1}}
180 \DeclareRobustCommand\MTfamily[1]{\def\m@stextfam{#1}}
181 \DeclareRobustCommand\MTseries[1]{\def\m@stextser{#1}}
182 \DeclareRobustCommand\MTshape[1]{\def\m@stextsh{#1}}
183 \ifmt@italic\else\def\m@stextshletter{#1}\fi
184 \DeclareRobustCommand\MTboldvariant[1]{\def\m@stextbold{#1}}
185 \DeclareRobustCommand\MTlettershape[1]{\def\m@stextshletter{#1}}
186 \let\Mathastextencoding\MTencoding
187 \let\Mathastextfamily\MTfamily
188 \let\Mathastextseries\MTseries
189 \let\Mathastextshape\MTshape
190 \let\Mathastextboldvariant\MTboldvariant
191 \let\Mathastextlettershape\MTlettershape

```

\MTwilluse This is a preamble-only command, it can be called more than once, only the latest call counts.

```

192 \DeclareRobustCommand\MTwilluse[5][\@empty]{
193 \MTencoding{#2}
194 \MTfamily{#3}
195 \MTseries{#4}
196 \MTshape{#5}
197 \ifx\@empty#1
198 \else
199 %% we check if optional argument was [], this does not detect [ ]
200 \def\mt@empty{} \def\mt@tmp{#1}
201 \ifx\mt@empty\mt@tmp\else\MTlettershape{#1}\fi
202 \fi
203 \Mathastext}
204 \let\Mathastextwilluse\MTwilluse
205 \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.

```

206 \DeclareRobustCommand\Mathastext[1][\@empty]{
207 \mt@font@info@off
208 \ifx\@empty#1 % no optional argument
209 \edef\mt@encoding@normal{\m@stextenc}

```

```

210 \edef\mt@family@normal{\m@stextfam}
211 \edef\mt@series@normal{\m@stextser}
212 \edef\mt@shape@normal{\m@stextsh}
213 \edef\mt@ltshape@normal{\m@stextshletter}
214 \edef\mt@boldvariant@normal{\m@stextbold}
215 \edef\mt@encoding@bold{\m@stextenc}
216 \edef\mt@family@bold{\m@stextfam}
217 \edef\mt@series@bold{\m@stextbold}
218 \edef\mt@shape@bold{\m@stextsh}
219 \edef\mt@ltshape@bold{\m@stextshletter}
220 \edef\mt@boldvariant@bold{\m@stextbold}
221 %%
222 \SetSymbolFont{mtletterfont}{normal}{\mt@encoding@normal}
223                                     {\mt@family@normal}
224                                     {\mt@series@normal}
225                                     {\mt@ltshape@normal}
226 \SetSymbolFont{mtletterfont}{bold}{\mt@encoding@bold}
227                                     {\mt@family@bold}
228                                     {\mt@series@bold}
229                                     {\mt@ltshape@bold}
230 \SetSymbolFont{mtoperatorfont}{normal}{\mt@encoding@normal}
231                                     {\mt@family@normal}
232                                     {\mt@series@normal}
233                                     {\mt@shape@normal}
234 \SetSymbolFont{mtoperatorfont}{bold}{\mt@encoding@bold}
235                                     {\mt@family@bold}
236                                     {\mt@series@bold}
237                                     {\mt@shape@bold}

```

\Mathbf 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).

```

238 \DeclareMathAlphabet{\Mathbf}{\mt@encoding@bold}
239                                     {\mt@family@bold}
240                                     {\mt@series@bold}
241                                     {\mt@shape@bold}

```

\mathnormalbold We add a new Alphabet changing macro to standard L^AT_EX

```

242 \DeclareMathAlphabet{\mathnormalbold}{\mt@encoding@bold}
243                                     {\mt@family@bold}
244                                     {\mt@series@bold}
245                                     {\mt@ltshape@bold}

```

\MathEulerBold We define it here as we leave open the possibility for the user to type `\Mathastextboldvariant{m}`.

```

246 \ifmt@needeuler
247     \SetSymbolFont{mteulervm}{bold}{U}{zeur}{\mt@boldvariant@normal}{n}
248     \DeclareMathAlphabet{\MathEulerBold}{U}{zeur}{\mt@boldvariant@normal}{n}
249 \fi

250 \ifmt@needsymbol\SetSymbolFont{mtpsymbol}{bold}
251                                     {U}{psy}{\mt@boldvariant@normal}{n}
252 \fi

```

LGRgreek LGRgreek option.

```

253 \ifmt@LGRgreek
254   \ifmt@upgreek\def\mt@tmp{n}
255   \else\ifmt@itgreek\def\mt@tmp{it}
256   \else\ifmt@frenchmath\def\mt@tmp{\mt@shape@normal}
257   \else\def\mt@tmp{\mt@ltshape@normal}
258   \fi\fi\fi
259   \SetSymbolFont{mtlgrfont}{normal}{LGR}
260     {\mt@family@normal}{\mt@series@normal}{\mt@tmp}
261   \SetSymbolFont{mtlgrfont}{bold}{LGR}
262     {\mt@family@bold}{\mt@boldvariant@normal}{\mt@tmp}
263   \ifmt@twoshapesforgreek
264     \ifmt@upgreek\def\mt@tmp{n}\else\def\mt@tmp{it}\fi
265     \SetSymbolFont{mtlgrfontupper}{normal}{LGR}
266       {\mt@family@normal}{\mt@series@normal}{\mt@tmp}
267     \SetSymbolFont{mtlgrfontupper}{bold}{LGR}
268       {\mt@family@bold}{\mt@boldvariant@bold}{\mt@tmp}
269   \fi

```

selfGreek selfGreek option.

```

270 \else
271 \ifmt@selfGreek
272   \mt@proceedfalse
273   \ifmt@upgreek\def\mt@tmp{n}\mt@proceedtrue\else
274   \ifmt@upgreek\def\mt@tmp{n}\mt@proceedtrue\else
275   \ifmt@itgreek\def\mt@tmp{it}\mt@proceedtrue\else
276   \ifmt@itgreek\def\mt@tmp{it}\mt@proceedtrue
277   \fi\fi\fi\fi
278   \ifmt@proceed
279     \SetSymbolFont{mtselffontupper}{normal}{\mt@encoding@normal}
280       {\mt@family@normal}{\mt@series@normal}{\mt@tmp}
281     \SetSymbolFont{mtselffontupper}{bold}{\mt@encoding@bold}
282       {\mt@family@bold}{\mt@boldvariant@bold}{\mt@tmp}
283   \fi
284 \fi\fi

285 \typeout{** Latin letters in math versions normal (resp. bold) are now^~J%
286   ** set up to use the fonts
287 \mt@encoding@normal/\mt@family@normal/\mt@series@normal%
288 (\mt@boldvariant@normal)/\mt@ltshape@normal}
289 \ifmt@nodigits\else
290   \typeout{** Other characters (digits, ...) and
291     \protect\log-like names will be^~J%
292   ** typeset with the \expandafter'\mt@shape@normal' shape.}
293   \fi
294 \else % optional argument, then we rather do DeclareVersion
295   \edef\mt@tmp{#1}\def\mt@empty{}
296   \ifx\mt@tmp\mt@empty
297     \Mathastext % no infinite loop!
298   \else
299     \MTDeclareVersion[\m@stextshletter]{#1}
300       {\m@stextenc}{\m@stextfam}{\m@stextser}{\m@stextsh}
301   \fi
302 \fi
303 \mt@font@info@on

```

304 }

`\MTDeclareVersion` The `\MTDeclareVersion` command is to be used in the preamble to declare a math version. I refrained from providing a more complicated one which 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}{version}{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: most users will want ‘it’ (thus going contrary to the philosophy which motivated me writing this package!). If the package option ‘italic’ was passed, ‘it’ is the default.

```

305 \DeclareRobustCommand\MTDeclareVersion[6][\@empty]{
306   \mt@font@info@off
307   \edef\mt@version{#2}
308   \DeclareMathVersion{\mt@version}
309   \expandafter\edef\csname mt@encoding@\mt@version\endcsname{#3}
310   \expandafter\edef\csname mt@family@\mt@version\endcsname{#4}
311   \expandafter\edef\csname mt@series@\mt@version\endcsname{#5}
312   \expandafter\edef\csname mt@shape@\mt@version\endcsname{#6}
313   \expandafter\edef\csname mt@boldvariant@\mt@version\endcsname{\m@stextbold}
314   \newif\ifmt@reallynoopt\mt@reallynoopttrue
315   \ifx\@empty#1
316     \else % we check nevertheless for [] situation, will not work with [ ]
317       \def\mt@tmp{#1}\def\mt@empty{}
318       \ifx\mt@tmp\mt@empty\else\mt@reallynooptfalse\fi
319     \fi
320   \ifmt@reallynoopt
321     \ifmt@italic
322       \SetSymbolFont{mtletterfont}{#2}{#3}{#4}{#5}{\m@stextshletter}
323       \typeout{** Latin letters in math version ‘#2’ will use the font
324       #3/#4/#5/\m@stextshletter^^J%
325       ** Other characters (digits, ...) and \protect\log-like names
326       will be in ‘#6’ shape.}
327       \expandafter\edef\csname mt@ltshape@\mt@version\endcsname{\m@stextshletter}
328     \else
329       \SetSymbolFont{mtletterfont}{#2}{#3}{#4}{#5}{#6}
330       \typeout{** Latin letters in math version ‘#2’ will use the fonts
331       #3/#4/#5(\m@stextbold)/#6}
332       \expandafter\edef\csname mt@ltshape@\mt@version\endcsname{#6}
333     \fi
334   \else
335     \SetSymbolFont{mtletterfont}{#2}{#3}{#4}{#5}{#1}
336     \typeout{** Latin letters in math version ‘#2’ will use the font
337     #3/#4/#5/#1^^J%
338     ** Other characters (digits, ...) and \protect\log-like
339     names will be in ‘#6’ shape.}
340     \expandafter\edef\csname mt@ltshape@\mt@version\endcsname{#1}
341   \fi
342   \SetMathAlphabet{\Mathbf}{#2}{#3}{#4}{\m@stextbold}{#6}
343   \SetSymbolFont{mtoperatorfont}{#2}{#3}{#4}{#5}{#6}

```

```

344 \ifmt@needeuler
345 \SetMathAlphabet{\MathEulerBold}{#2}{U}{zeur}{\m@stextbold}{n}
346 \fi

```

mtlgrfont In the case of option LGRgreek, it is expected that the fonts used in each math versions exist in LGR encoding.

```

347 \ifmt@LGRgreek
348 \ifmt@upgreek\def\mt@tmp{n}
349 \else\ifmt@itgreek\def\mt@tmp{it}
350 \else\ifmt@frenchmath\def\mt@tmp{\csname mt@shape@\mt@version\endcsname}
351 \else\def\mt@tmp{\csname mt@ltshape@\mt@version\endcsname}
352 \fi\fi\fi
353 \SetSymbolFont{mtlgrfont}{#2}{LGR}{#4}{#5}{\mt@tmp}
354 %% \typeout{** Greek letters in math version '#2' will use the font
355 %% LGR/#4/#5/\mt@tmp}
356 \ifmt@twoshapesforgreek
357 \ifmt@upGreek\def\mt@tmp{n}\else\def\mt@tmp{it}\fi
358 \SetSymbolFont{mtlgrfontupper}{#2}{LGR}{#4}{#5}{\mt@tmp}
359 %% \typeout{** Uppercase Greek letters in math version '#2' will use the font
360 %% LGR/#4/#5/\mt@tmp}
361 \fi

```

mtlgrfont selfGreek

```

362 \else
363 \ifmt@selfGreek
364 \mt@proceedfalse
365 \ifmt@upGreek\def\mt@tmp{n}\mt@proceedtrue\else
366 \ifmt@upgreek\def\mt@tmp{n}\mt@proceedtrue\else
367 \ifmt@itGreek\def\mt@tmp{it}\mt@proceedtrue\else
368 \ifmt@itgreek\def\mt@tmp{it}\mt@proceedtrue
369 \fi\fi\fi\fi
370 \ifmt@proceed
371 \SetSymbolFont{mtselffontupper}{#2}{#3}{#4}{#5}{\mt@tmp}
372 \fi
373 \fi\fi

374 \mt@font@info@on
375 }
376 \let\MathastextDeclareVersion\MTDeclareVersion

```

We redefine our internal variables without expansion so that they get a chance to be also (indirectly or directly) modified by user later choices regarding `\encodingdefault`, etc. . . , previous to a user call to `\Mathastext` or `\Mathastextwilluse`.

```

377 \def\m@stextenc{\encodingdefault}
378 \def\m@stextfam{\familydefault}
379 \def\m@stextser{\seriesdefault}
380 \def\m@stextsh{\shapedefault}
381 \def\m@stextbold{\bfdefault}
382 \def\m@stextshletter{\shapedefault}
383 \ifmt@italic\def\m@stextshletter{\itdefault}\fi

```

Initialization call:

```

384 \Mathastext

```

`\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.

```
385 \def\operator@font{\mathgroup\symmtooperatorfont}
```

`\mathnormal` We redefine the normal, rm and bf alphabets. In version 1.1 we follow the standard:
`\mathrm` normal gives the font for letters, rm gives the font for digits and log-like names, bf
`\mathbf` for the bold series of the font for digits and log-like names.

We will access by default (if no option is passed for Greek) the `\omicron` via `\mathnormal`. So we save it for future use. But unfortunately the Fourier package with the upright option does not have an upright omicron obtainable by simply typing `\mathnormal{o}`. So in this case we shall use `\mathrm` and not `\mathnormal`.

```
386 \let\mt@saved@mathnormal\mathnormal
387 \ifpackageloaded{fourier}{\ifslowed\else\let\mt@saved@mathnormal\mathrm\fi}{
388 \ifmt@defaultnormal\else\renewcommand{\mathnormal}{\Mathnormal}\fi
389 \ifmt@defaultrm\else\renewcommand{\mathrm}{\Mathrm}\fi
390 \ifmt@defaultbf\else\renewcommand{\mathbf}{\Mathbf}\fi
```

We write appropriate messages to the terminal and the log.

```
391 %% \ifmt@LGRgreek
392 %% \typeout{** Greek letters will use the font
393 %% LGR/\mt@family@normal/\mt@series@normal/\mt@ltshape@normal}
394 %% \else
395 \ifmt@selfgreek
396 \typeout{** Capital Greek letters will be taken from the fonts
397 declared for latin letters:^^J%
398 ** only for OT1 or compatible encodings; glyphs may be unavailable.}
399 \else
400 \ifmt@eulergreek
401 \typeout{** Greek letters will use the Euler font. Use^^J%
402 ** \protect\MathastextEulerScale{<factor>} to scale the font.}
403 \else
404 \ifmt@symbolgreek
405 \typeout{** Greek letters will use the PostScript Symbol font. Use^^J%
406 ** \protect\MathastextSymbolScale{<factor>} to scale the font.}
407 \fi\fi\fi
408 %%\fi
```

`\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 font.

```
409 \DeclareRobustCommand\MTVersion[2][\@empty]{%
410 \mathversion{#2}%
411 \ifx\@empty#1% no optional argument
412 \edef\mt@tmp{#2}
413 \else% we check nevertheless for [] situation, will not work with [ ]
414 \def\mt@tmp{#1}\def\mt@empty{}%
415 \ifx\mt@tmp\mt@empty\edef\mt@tmp{#2}%
416 \else\edef\mt@tmp{#1}%
417 \fi%
```

```

418 \fi%
419 \usefont{\csname mt@encoding@\mt@tmp\endcsname}%
420 {\csname mt@family@\mt@tmp\endcsname}%
421 {\csname mt@series@\mt@tmp\endcsname}%
422 {\csname mt@shape@\mt@tmp\endcsname}%
423 \edef\mt@@encoding{\csname mt@encoding@\mt@tmp\endcsname}%
424 \renewcommand{\encodingdefault}{\mt@@encoding}%
425 \edef\mt@@family{\csname mt@family@\mt@tmp\endcsname}%
426 \renewcommand{\rmdefault}{\mt@@family}%
427 \edef\mt@@series{\csname mt@series@\mt@tmp\endcsname}%
428 \renewcommand{\mddefault}{\mt@@series}%
429 \edef\mt@@shape{\csname mt@shape@\mt@tmp\endcsname}%
430 \renewcommand{\updefault}{\mt@@shape}%
431 \edef\mt@@boldvariant{\csname mt@boldvariant@\mt@tmp\endcsname}%
432 \renewcommand{\bfdefault}{\mt@@boldvariant}}
433 \let\MathastextVersion\MTVersion
434 \let\Mathastextversion\MTVersion
435 \let\MTversion\MTVersion

```

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

```

436 \DeclareMathSymbol{a}{\mathalpha}{mtletterfont}{‘a}
437 \DeclareMathSymbol{b}{\mathalpha}{mtletterfont}{‘b}
438 \DeclareMathSymbol{c}{\mathalpha}{mtletterfont}{‘c}
439 \DeclareMathSymbol{d}{\mathalpha}{mtletterfont}{‘d}
440 \DeclareMathSymbol{e}{\mathalpha}{mtletterfont}{‘e}
441 \DeclareMathSymbol{f}{\mathalpha}{mtletterfont}{‘f}
442 \DeclareMathSymbol{g}{\mathalpha}{mtletterfont}{‘g}
443 \DeclareMathSymbol{h}{\mathalpha}{mtletterfont}{‘h}
444 \DeclareMathSymbol{i}{\mathalpha}{mtletterfont}{‘i}
445 \DeclareMathSymbol{j}{\mathalpha}{mtletterfont}{‘j}
446 \DeclareMathSymbol{k}{\mathalpha}{mtletterfont}{‘k}
447 \DeclareMathSymbol{l}{\mathalpha}{mtletterfont}{‘l}
448 \DeclareMathSymbol{m}{\mathalpha}{mtletterfont}{‘m}
449 \DeclareMathSymbol{n}{\mathalpha}{mtletterfont}{‘n}
450 \DeclareMathSymbol{o}{\mathalpha}{mtletterfont}{‘o}
451 \DeclareMathSymbol{p}{\mathalpha}{mtletterfont}{‘p}
452 \DeclareMathSymbol{q}{\mathalpha}{mtletterfont}{‘q}
453 \DeclareMathSymbol{r}{\mathalpha}{mtletterfont}{‘r}
454 \DeclareMathSymbol{s}{\mathalpha}{mtletterfont}{‘s}
455 \DeclareMathSymbol{t}{\mathalpha}{mtletterfont}{‘t}
456 \DeclareMathSymbol{u}{\mathalpha}{mtletterfont}{‘u}
457 \DeclareMathSymbol{v}{\mathalpha}{mtletterfont}{‘v}
458 \DeclareMathSymbol{w}{\mathalpha}{mtletterfont}{‘w}
459 \DeclareMathSymbol{x}{\mathalpha}{mtletterfont}{‘x}
460 \DeclareMathSymbol{y}{\mathalpha}{mtletterfont}{‘y}
461 \DeclareMathSymbol{z}{\mathalpha}{mtletterfont}{‘z}
462 \ifmt@frenchmath\def\mt@font@tbu{mtoperatorfont}
463 \else\def\mt@font@tbu{mtletterfont}\fi
464 \DeclareMathSymbol{A}{\mathalpha}{\mt@font@tbu}{‘A}
465 \DeclareMathSymbol{B}{\mathalpha}{\mt@font@tbu}{‘B}
466 \DeclareMathSymbol{C}{\mathalpha}{\mt@font@tbu}{‘C}
467 \DeclareMathSymbol{D}{\mathalpha}{\mt@font@tbu}{‘D}

```

```

468 \DeclareMathSymbol{E}{\mathalpha}{\mt@font@tbu}{‘E}
469 \DeclareMathSymbol{F}{\mathalpha}{\mt@font@tbu}{‘F}
470 \DeclareMathSymbol{G}{\mathalpha}{\mt@font@tbu}{‘G}
471 \DeclareMathSymbol{H}{\mathalpha}{\mt@font@tbu}{‘H}
472 \DeclareMathSymbol{I}{\mathalpha}{\mt@font@tbu}{‘I}
473 \DeclareMathSymbol{J}{\mathalpha}{\mt@font@tbu}{‘J}
474 \DeclareMathSymbol{K}{\mathalpha}{\mt@font@tbu}{‘K}
475 \DeclareMathSymbol{L}{\mathalpha}{\mt@font@tbu}{‘L}
476 \DeclareMathSymbol{M}{\mathalpha}{\mt@font@tbu}{‘M}
477 \DeclareMathSymbol{N}{\mathalpha}{\mt@font@tbu}{‘N}
478 \DeclareMathSymbol{O}{\mathalpha}{\mt@font@tbu}{‘O}
479 \DeclareMathSymbol{P}{\mathalpha}{\mt@font@tbu}{‘P}
480 \DeclareMathSymbol{Q}{\mathalpha}{\mt@font@tbu}{‘Q}
481 \DeclareMathSymbol{R}{\mathalpha}{\mt@font@tbu}{‘R}
482 \DeclareMathSymbol{S}{\mathalpha}{\mt@font@tbu}{‘S}
483 \DeclareMathSymbol{T}{\mathalpha}{\mt@font@tbu}{‘T}
484 \DeclareMathSymbol{U}{\mathalpha}{\mt@font@tbu}{‘U}
485 \DeclareMathSymbol{V}{\mathalpha}{\mt@font@tbu}{‘V}
486 \DeclareMathSymbol{W}{\mathalpha}{\mt@font@tbu}{‘W}
487 \DeclareMathSymbol{X}{\mathalpha}{\mt@font@tbu}{‘X}
488 \DeclareMathSymbol{Y}{\mathalpha}{\mt@font@tbu}{‘Y}
489 \DeclareMathSymbol{Z}{\mathalpha}{\mt@font@tbu}{‘Z}
490 %%
491 \ifmt@nodigits\else
492 \def\mt@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.

```

493 \ifmt@symboldigits \def\mt@font@tbu{mtpsymbol} \fi
494 \ifmt@eulerdigits \def\mt@font@tbu{mteulervm} \fi
495 \DeclareMathSymbol{0}{\mathalpha}{\mt@font@tbu}{‘0}
496 \DeclareMathSymbol{1}{\mathalpha}{\mt@font@tbu}{‘1}
497 \DeclareMathSymbol{2}{\mathalpha}{\mt@font@tbu}{‘2}
498 \DeclareMathSymbol{3}{\mathalpha}{\mt@font@tbu}{‘3}
499 \DeclareMathSymbol{4}{\mathalpha}{\mt@font@tbu}{‘4}
500 \DeclareMathSymbol{5}{\mathalpha}{\mt@font@tbu}{‘5}
501 \DeclareMathSymbol{6}{\mathalpha}{\mt@font@tbu}{‘6}
502 \DeclareMathSymbol{7}{\mathalpha}{\mt@font@tbu}{‘7}
503 \DeclareMathSymbol{8}{\mathalpha}{\mt@font@tbu}{‘8}
504 \DeclareMathSymbol{9}{\mathalpha}{\mt@font@tbu}{‘9}
505 \fi

```

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

```

506 \ifmt@symboldelimiters
507 \def\mt@font@tbu{mtpsymbol}
508 \mt@endashfalse
509 \mt@emdashfalse
510 \else
511 \def\mt@font@tbu{mtoperatorfont}
512 \fi
513 %%
514 \ifmt@noexclam\else
515 \DeclareMathSymbol{!}{\mathclose}{\mt@font@tbu}{"21}

```

```

516 \DeclareMathSymbol{?}{\mathclose}{\mt@font@tbu}{3F}
517 \fi
518 %%
519 \ifmt@noast\else
520 \DeclareMathSymbol{*}{\mathalpha}{\mt@font@tbu}{2A}
521 \fi

```

We 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).

```

522 \ifmt@nopunct\else
523 \DeclareMathSymbol{,}{\mathpunct}{\mt@font@tbu}{2C}
524 \DeclareMathSymbol{.}{\mathord}{\mt@font@tbu}{2E}
525 \DeclareMathSymbol{:}{\mathrel}{\mt@font@tbu}{3A} % relation spacing
526 \ifpackageloaded{amsmath}
527   {} %\colon defined in amsmath.sty (enlarged punctuation spacing)
528   {\let\colon\undefined % no amsmath, use punctuation spacing
529   \DeclareMathSymbol{\colon}{\mathpunct}{\mt@font@tbu}{3A}}
530 \DeclareMathSymbol{;}{\mathpunct}{\mt@font@tbu}{3B}
531 \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.

```

532 \ifmt@nominus\else
533 \edef\mt@minus@sign{\mathord{\expandafter\mathchar\number\mathcode'\-}}
534 \def\relbar{\mathrel{\smash{\mt@minus@sign}}}
535 \def\rightarrowfill{$\m@th\mt@minus@sign\mkern-7mu%
536   \cleaders\hbox{$\mkern-2mu\mt@minus@sign\mkern-2mu$}\hfill
537   \mkern-7mu\mathord\rightarrow$}
538 \def\leftarrowfill{$\m@th\mathord\leftarrow\mkern-7mu%
539   \cleaders\hbox{$\mkern-2mu\mt@minus@sign\mkern-2mu$}\hfill
540   \mkern-7mu\smash{\mt@minus@sign$}
541 \fi

```

endash 2011/01/29, v1.1 Producing this next piece of code was not a piece of cake for a novice like myself! I got some L^AT_EX internal info from `ltoutenc.dtx`. However this will only work in the math versions having the same encoding as defined by default. 2011/02/05, v1.11. Compatibility with Unicode (via `fontspec` encodings EU1 and EU2) 2011/02/07, v1.12. Improved dealing of unicode engines.

```

542 \def\do@the@endashstuff{\edef\mt@enc{\m@stextenc}
543 \ifx\mt@enc\mt@eui % xetex+fontspec
544   \XeTeXmathcode'\-="2 "\the\symmtooperatorfont "2013 \relax
545 \else
546 \ifx\mt@enc\mt@euii % luatex+fontspec
547   \luatexUmathcode'\-="2 "\the\symmtooperatorfont "2013 \relax
548 \else
549 \ifx\mt@enc\mt@ti % T1
550   \DeclareMathSymbol{-}{\mathbin}{\mtooperatorfont}{21}
551 \else
552 \ifx\mt@enc\mt@oti % OT1

```

```

553 \DeclareMathSymbol{-}{\mathbin}{mtoperatorfont}{123}
554 \else
555 \ifx\mt@enc\mt@lyi % LY1
556 \DeclareMathSymbol{-}{\mathbin}{mtoperatorfont}{150}
557 \else % make sure we have neither xetex nor luatex
558 \ifXeTeX\mt@failedtrue\else\ifLuaTeX\mt@failedtrue\else
559 \DeclareMathSymbol{-}{\mathbin}{mtoperatorfont}
560 {\expandafter\the\expandafter\csname\mt@enc\string\textendash\endcsname}
561 \fi\fi
562 \fi\fi\fi\fi\fi}
563 \def\do@the@emdashstuff{\edef\mt@enc{\m@stextenc}
564 \ifx\mt@enc\mt@eui % xetex+fontspec
565 \XeTeXmathcode'\-="2 "\the\symmtoperatorfont "2014 \relax
566 \else
567 \ifx\mt@enc\mt@euii % luatex+fontspec
568 \luatexUmathcode'\-="2 "\the\symmtoperatorfont "2014 \relax
569 \else
570 \ifx\mt@enc\mt@ti % T1
571 \DeclareMathSymbol{-}{\mathbin}{mtoperatorfont}{22}
572 \else
573 \ifx\mt@enc\mt@oti % OT1
574 \DeclareMathSymbol{-}{\mathbin}{mtoperatorfont}{124}
575 \else
576 \ifx\mt@enc\mt@lyi % LY1
577 \DeclareMathSymbol{-}{\mathbin}{mtoperatorfont}{151}
578 \else % make sure we have neither xetex nor luatex
579 \ifXeTeX\mt@failedtrue\else\ifLuaTeX\mt@failedtrue\else
580 \DeclareMathSymbol{-}{\mathbin}{mtoperatorfont}
581 {\expandafter\the\expandafter\csname\mt@enc\string\textendash\endcsname}
582 \fi\fi
583 \fi\fi\fi\fi\fi}
584 \ifmt@nominus\else
585 \mt@failedfalse
586 \ifmt@endash\do@the@endashstuff\else
587 \ifmt@emdash\do@the@emdashstuff\else
588 \DeclareMathSymbol{-}{\mathbin}{\mt@font@tbu}{"2D}
589 \fi\fi
590 \ifmt@failed\DeclareMathSymbol{-}{\mathbin}{\mt@font@tbu}{"2D}\fi
591 \fi

```

`\hbar` 2011/01/31, v1.1 I decide to settle the question of the `\hbar`. First, I should repeat the `\mt@ltbar` the \LaTeX definition

```

592 %\def\hbar{{\mathchar'26\mkern-9mu h}}
593 %% (original definition from latex.ltx)

```

Well, the fact is that there is a `DeclareMathSymbol` in `amsfonts.sty`, so I can not always rely on the original which had the advantage that at least `h` would be in the correct font. But of course not the macron character (`\=`, `\bar`). And there is also the issue of the kern whose length is given in a way which depends on `cmsy` (`18mu=1em` and `em` taken from info in `cmsy`). The first problem is that I don't know how to get the slot position of the macron, given the encoding. So I found another way. I will need an `rlap` adapted to math mode, and this is provided by code from Alexander R. PERLIS in his TugBoat article 22 (2001), 350–352, which

I found by googling rlap.

```

594 \def\mathrlap{\mathpalette\mathrlapinternal}
595 \def\mathrlapinternal#1#2{\rlap{$\mathsurround=0pt#1{#2}$}}
596 \def\do@the@hbarstuff{\edef\mt@enc{\m@stextenc}
597 \ifx\mt@enc\mt@eui % xetex and unicode font
598 \XeTeXmathchardef\hbar="7 "\the\symmoperatorfont "0127 \relax
599 \else
600 \ifx\mt@enc\mt@euii % luatex and unicode font
601 \luatexUmathchardef\hbar="7 "\the\symmoperatorfont "0127 \relax %% or 210F?
602 \else % I must leave open the T1, OT1 possibility also for XeTeX or LuaTeX
603 \ifx\mt@ti\mt@enc
604 \DeclareMathAccent{\mt@ltbar}{\mathalpha}{mtletterfont}{9}
605 \else %% assume OT1. Bad idea? Should not provoke an error anyhow
606 \DeclareMathAccent{\mt@ltbar}{\mathalpha}{mtletterfont}{22}
607 \fi
608 \def\hbar{\mathrlap{\mt@ltbar{\ }h}}
609 \fi\fi}
610 \ifmt@nohbar\else\do@the@hbarstuff\fi

```

As `h` is from `mtletterfont`, the accent `\mt@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 `TEXpert`.) 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.

`+,=\Relbar`

```

611 \ifmt@noplus\else
612 \DeclareMathSymbol{+}{\mathbin}{\mt@font@tbu}{2B}
613 \fi
614 \ifmt@noequal\else
615 \edef\mt@equal@sign{{\expandafter\mathchar\number\mathcode'\=}}
616 \DeclareRobustCommand\Relbar{\mathrel{\mt@equal@sign}}
617 \DeclareMathSymbol{=}{\mathrel}{\mt@font@tbu}{3D}
618 \fi

```

`(,),[,],/`

```

619 \ifmt@noparen\else
620 \DeclareMathDelimiter{()}{\mathopen}{\mt@font@tbu}{28}{largesymbols}{00}
621 \DeclareMathDelimiter{)}{\mathclose}{\mt@font@tbu}{29}{largesymbols}{01}
622 \DeclareMathDelimiter{[]}{\mathopen}{\mt@font@tbu}{5B}{largesymbols}{02}
623 \DeclareMathDelimiter{[]}{\mathclose}{\mt@font@tbu}{5D}{largesymbols}{03}
624 \DeclareMathDelimiter{/}{\mathord}{\mt@font@tbu}{2F}{largesymbols}{0E}
625 \DeclareMathSymbol{/}{\mathord}{\mt@font@tbu}{2F}
626 \fi

```

`alldelims`

```

627 \ifmt@alldelims
628 %% \ifmt@symboldelimiters\else
629 %% \ifx\mt@ti\mt@enc\else
630 %% \typeout{** mathastext: 'alldelims'. Characters <,>,{,},| will be assumed
631 %% to ^~J%

```


`\renewcommand{\prod}{\mathchoice{\mst@prod}{\prodpsy}{\prodpsy}{\prodpsy}}`
but this did not go well with subscripts and exponents.

```

663 \ifmt@symbolmisc
664 \let\mst@prod\prod
665 \let\defaultprod\prod
666 \DeclareMathSymbol{\prodpsy}{\mathop}{mtpsymbol}{213}
667 \renewcommand{\prod}{\ifinner\prodpsy\else\mst@prod\fi}
668 \let\mst@sum\sum
669 \let\defaultsum\sum
670 \DeclareMathSymbol{\sumpsy}{\mathop}{mtpsymbol}{229}
671 \renewcommand{\sum}{\ifinner\sumpsy\else\mst@sum\fi}

672 \DeclareMathSymbol{\mt@implies}{\mathrel}{mtpsymbol}{222}
673 \DeclareRobustCommand{\implies}{\;\;\mt@implies\;}
674 \DeclareMathSymbol{\mt@impliedby}{\mathrel}{mtpsymbol}{220}
675 \DeclareRobustCommand{\impliedby}{\;\;\mt@impliedby\;}
676 \DeclareRobustCommand{\iff}{\;\;\mt@impliedby\mathrel{\mkern-3mu}\mt@implies\;}
677 \DeclareMathSymbol{\mt@iff}{\mathrel}{mtpsymbol}{219}
678 \DeclareRobustCommand{\shortiff}{\;\;\mt@iff\;}
679 \DeclareMathSymbol{\mt@to}{\mathrel}{mtpsymbol}{174}
680 \DeclareMathSymbol{\mt@trait}{\mathrel}{mtpsymbol}{190}
681 \DeclareRobustCommand\to{\mt@to}
682 \DeclareRobustCommand\longto{\mkern2mu\mt@trait\mathrel{\mkern-10mu}\mt@to}
683 \DeclareRobustCommand\mapsto{\mapstochar\mathrel{\mkern0.2mu}\mt@to}
684 \DeclareRobustCommand\longmapsto{\%
685 \mapstochar\mathrel{\mkern2mu}\mt@trait\mathrel{\mkern-10mu}\mt@to}
686 \DeclareMathSymbol{\aleph}{\mathord}{mtpsymbol}{192}
687 \DeclareMathSymbol{\infty}{\mathord}{mtpsymbol}{165}
688 \DeclareMathSymbol{\emptyset}{\mathord}{mtpsymbol}{198}
689 \let\varnothing\emptyset
690 \DeclareMathSymbol{\nabla}{\mathord}{mtpsymbol}{209}
691 \DeclareMathSymbol{\surd}{\mathop}{mtpsymbol}{214}
692 \let\angle\undefined
693 \DeclareMathSymbol{\angle}{\mathord}{mtpsymbol}{208}
694 \DeclareMathSymbol{\forall}{\mathord}{mtpsymbol}{34}
695 \DeclareMathSymbol{\exists}{\mathord}{mtpsymbol}{36}
696 \DeclareMathSymbol{\neg}{\mathord}{mtpsymbol}{216}
697 \DeclareMathSymbol{\clubsuit}{\mathord}{mtpsymbol}{167}
698 \DeclareMathSymbol{\diamondsuit}{\mathord}{mtpsymbol}{168}
699 \DeclareMathSymbol{\heartsuit}{\mathord}{mtpsymbol}{169}
700 \DeclareMathSymbol{\spadesuit}{\mathord}{mtpsymbol}{170}
701 \DeclareMathSymbol{\smallint}{\mathop}{mtpsymbol}{242}
702 \DeclareMathSymbol{\wedge}{\mathbin}{mtpsymbol}{217}
703 \DeclareMathSymbol{\vee}{\mathbin}{mtpsymbol}{218}
704 \DeclareMathSymbol{\cap}{\mathbin}{mtpsymbol}{199}
705 \DeclareMathSymbol{\cup}{\mathbin}{mtpsymbol}{200}
706 \DeclareMathSymbol{\bullet}{\mathbin}{mtpsymbol}{183}
707 \DeclareMathSymbol{\div}{\mathbin}{mtpsymbol}{184}
708 \DeclareMathSymbol{\otimes}{\mathbin}{mtpsymbol}{196}
709 \DeclareMathSymbol{\oplus}{\mathbin}{mtpsymbol}{197}
710 \DeclareMathSymbol{\pm}{\mathbin}{mtpsymbol}{177}
711 \% \DeclareMathSymbol{*}{\mathbin}{mtpsymbol}{42}
712 \DeclareMathSymbol{\ast}{\mathbin}{mtpsymbol}{42}
713 \DeclareMathSymbol{\times}{\mathbin}{mtpsymbol}{180}

```

```

714 \DeclareMathSymbol{\proptopsy}{\mathrel}{mtpsymbol}{181}
715 \DeclareMathSymbol{\mid}{\mathrel}{mtpsymbol}{124}
716 \DeclareMathSymbol{\leq}{\mathrel}{mtpsymbol}{163}
717 \DeclareMathSymbol{\geq}{\mathrel}{mtpsymbol}{179}
718 \DeclareMathSymbol{\approx}{\mathrel}{mtpsymbol}{187}
719 \DeclareMathSymbol{\supset}{\mathrel}{mtpsymbol}{201}
720 \DeclareMathSymbol{\subset}{\mathrel}{mtpsymbol}{204}
721 \DeclareMathSymbol{\supseteq}{\mathrel}{mtpsymbol}{202}
722 \DeclareMathSymbol{\subseteq}{\mathrel}{mtpsymbol}{205}
723 \DeclareMathSymbol{\in}{\mathrel}{mtpsymbol}{206}
724 \DeclareMathSymbol{\sim}{\mathrel}{mtpsymbol}{126}
725 \let\cong\undefined
726 \DeclareMathSymbol{\cong}{\mathrel}{mtpsymbol}{64}
727 \DeclareMathSymbol{\perp}{\mathrel}{mtpsymbol}{94}
728 \DeclareMathSymbol{\equiv}{\mathrel}{mtpsymbol}{186}
729 \let\notin\undefined
730 \DeclareMathSymbol{\notin}{\mathrel}{mtpsymbol}{207}
731 \DeclareMathDelimiter{\rangle}
732   {\mathclose}{mtpsymbol}{241}{largesymbols}{"0B}
733 \DeclareMathDelimiter{\langle}
734   {\mathopen}{mtpsymbol}{225}{largesymbols}{"0A}
735 \fi

```

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

```

736 \ifmt@symbolre
737 \DeclareMathSymbol{\Re}{\mathord}{mtpsymbol}{C2}
738 \DeclareMathSymbol{\Im}{\mathord}{mtpsymbol}{C1}
739 \DeclareMathSymbol{\DotTriangle}{\mathord}{mtpsymbol}{92}
740 \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.

```

741 \let\mt@mathord\mathalpha
742 \mt@proceedtrue
743 \ifmt@selfGreek
744   \def\mt@font@tbu{\mt@uppergreekfont}
745 \else
746 \ifmt@eulergreek
747   \def\mt@font@tbu{\mteulervm}
748 \else

```

```

749 \ifmt@symbolgreek
750     \def\mt@font@tbu{mtpsymbol}
751     \let\mt@mathord\mathord
752 \else
753 \ifmt@LGRgreek
754     \mt@proceedfalse
755 \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.

```

756     \mt@proceedfalse
757     \ifx\omicron\undefined
758     \newcommand{\omicron}{\mt@saved@mathnormal{o}}
759     \fi
760 \fi\fi\fi\fi
761 \ifmt@proceed
762 \DeclareMathSymbol{\Alpha}{\mt@mathord}{\mt@font@tbu}{41}
763 \DeclareMathSymbol{\Beta}{\mt@mathord}{\mt@font@tbu}{42}
764 \DeclareMathSymbol{\Epsilon}{\mt@mathord}{\mt@font@tbu}{45}
765 \DeclareMathSymbol{\Zeta}{\mt@mathord}{\mt@font@tbu}{5A}
766 \DeclareMathSymbol{\Eta}{\mt@mathord}{\mt@font@tbu}{48}
767 \DeclareMathSymbol{\Iota}{\mt@mathord}{\mt@font@tbu}{49}
768 \DeclareMathSymbol{\Kappa}{\mt@mathord}{\mt@font@tbu}{4B}
769 \DeclareMathSymbol{\Mu}{\mt@mathord}{\mt@font@tbu}{4D}
770 \DeclareMathSymbol{\Nu}{\mt@mathord}{\mt@font@tbu}{4E}
771 \DeclareMathSymbol{\Omicron}{\mt@mathord}{\mt@font@tbu}{4F}
772 \DeclareMathSymbol{\Rho}{\mt@mathord}{\mt@font@tbu}{50}
773 \DeclareMathSymbol{\Tau}{\mt@mathord}{\mt@font@tbu}{54}
774 \DeclareMathSymbol{\Chi}{\mt@mathord}{\mt@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`).

```

775 \ifx\mt@mathord\mathord
    symbolgreek but neither eulergreek nor selfGreek
776 %% attention le P de Symbol est un \Pi pas un \Rho
777 \DeclareMathSymbol{\Rho}{\mathord}{mtpsymbol}{52}
778 %% attention le X de Symbol est un \Xi pas un \Chi
779 \DeclareMathSymbol{\Chi}{\mathord}{mtpsymbol}{43}
780 %% attention le F de Symbol est un \Phi. Il n'y a pas de \Digamma
781 \DeclareMathSymbol{\Gamma}{\mathord}{mtpsymbol}{47}
782 \DeclareMathSymbol{\Delta}{\mathord}{mtpsymbol}{44}
783 \DeclareMathSymbol{\Theta}{\mathord}{mtpsymbol}{51}
784 \DeclareMathSymbol{\Lambda}{\mathord}{mtpsymbol}{4C}
785 \DeclareMathSymbol{\Xi}{\mathord}{mtpsymbol}{58}
786 \DeclareMathSymbol{\Pi}{\mathord}{mtpsymbol}{50}
787 \DeclareMathSymbol{\Sigma}{\mathord}{mtpsymbol}{53}
788 \DeclareMathSymbol{\Upsilon}{\mathord}{mtpsymbol}{A1}
789 \DeclareMathSymbol{\Phi}{\mathord}{mtpsymbol}{46}
790 \DeclareMathSymbol{\Psi}{\mathord}{mtpsymbol}{59}
791 \DeclareMathSymbol{\Omega}{\mathord}{mtpsymbol}{57}
792 \else

```

not symbolgreek but eulergreek or selfGreek or both

```

793 \DeclareMathSymbol{\Digamma}{\mathalpha}{\mt@font@tbu}{\{"46}
794 \DeclareMathSymbol\Gamma      {\mathalpha}{\mt@font@tbu}{\{"00}
795 \DeclareMathSymbol\Delta      {\mathalpha}{\mt@font@tbu}{\{"01}
796 \DeclareMathSymbol\Theta      {\mathalpha}{\mt@font@tbu}{\{"02}
797 \DeclareMathSymbol\Lambda      {\mathalpha}{\mt@font@tbu}{\{"03}
798 \DeclareMathSymbol\Xi         {\mathalpha}{\mt@font@tbu}{\{"04}
799 \DeclareMathSymbol\Pi         {\mathalpha}{\mt@font@tbu}{\{"05}
800 \DeclareMathSymbol\Sigma      {\mathalpha}{\mt@font@tbu}{\{"06}
801 \DeclareMathSymbol\Upsilon    {\mathalpha}{\mt@font@tbu}{\{"07}
802 \DeclareMathSymbol\Phi       {\mathalpha}{\mt@font@tbu}{\{"08}
803 \DeclareMathSymbol\Psi       {\mathalpha}{\mt@font@tbu}{\{"09}
804 \DeclareMathSymbol\Omega     {\mathalpha}{\mt@font@tbu}{\{"0A}
805 \fi
806 \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`

```

807 \ifmt@proceed
808 \ifmt@eulergreek
809 \DeclareMathSymbol{\alpha}{\mathalpha}{\mteulervm}{\{"0B}
810 \DeclareMathSymbol{\beta}{\mathalpha}{\mteulervm}{\{"0C}
811 \DeclareMathSymbol{\gamma}{\mathalpha}{\mteulervm}{\{"0D}
812 \DeclareMathSymbol{\delta}{\mathalpha}{\mteulervm}{\{"0E}
813 \DeclareMathSymbol{\epsilon}{\mathalpha}{\mteulervm}{\{"0F}
814 \DeclareMathSymbol{\zeta}{\mathalpha}{\mteulervm}{\{"10}
815 \DeclareMathSymbol{\eta}{\mathalpha}{\mteulervm}{\{"11}
816 \DeclareMathSymbol{\theta}{\mathalpha}{\mteulervm}{\{"12}
817 \DeclareMathSymbol{\iota}{\mathalpha}{\mteulervm}{\{"13}
818 \DeclareMathSymbol{\kappa}{\mathalpha}{\mteulervm}{\{"14}
819 \DeclareMathSymbol{\lambda}{\mathalpha}{\mteulervm}{\{"15}
820 \DeclareMathSymbol{\mu}{\mathalpha}{\mteulervm}{\{"16}
821 \DeclareMathSymbol{\nu}{\mathalpha}{\mteulervm}{\{"17}
822 \DeclareMathSymbol{\xi}{\mathalpha}{\mteulervm}{\{"18}
823 \let\omicron\undefined
824 \DeclareMathSymbol{\omicron}{\mathalpha}{\mteulervm}{\{"16F}
825 \DeclareMathSymbol{\pi}{\mathalpha}{\mteulervm}{\{"19}
826 \DeclareMathSymbol{\rho}{\mathalpha}{\mteulervm}{\{"1A}
827 \DeclareMathSymbol{\sigma}{\mathalpha}{\mteulervm}{\{"1B}
828 \DeclareMathSymbol{\tau}{\mathalpha}{\mteulervm}{\{"1C}
829 \DeclareMathSymbol{\upsilon}{\mathalpha}{\mteulervm}{\{"1D}
830 \DeclareMathSymbol{\phi}{\mathalpha}{\mteulervm}{\{"1E}
831 \DeclareMathSymbol{\chi}{\mathalpha}{\mteulervm}{\{"1F}
832 \DeclareMathSymbol{\psi}{\mathalpha}{\mteulervm}{\{"20}
833 \DeclareMathSymbol{\omega}{\mathalpha}{\mteulervm}{\{"21}
834 \DeclareMathSymbol{\varepsilon}{\mathalpha}{\mteulervm}{\{"22}
835 \DeclareMathSymbol{\vartheta}{\mathalpha}{\mteulervm}{\{"23}
836 \DeclareMathSymbol{\varpi}{\mathalpha}{\mteulervm}{\{"24}
837 \let\varrho=\rho
838 \let\varsigma=\sigma
839 \DeclareMathSymbol{\varphi}{\mathalpha}{\mteulervm}{\{"27}

```

```

840 \DeclareMathSymbol{\partial}{\mathalpha}{\mteulervm}{40}
841 \DeclareMathSymbol{\wp}{\mathalpha}{\mteulervm}{7D}
842 \DeclareMathSymbol{\ell}{\mathalpha}{\mteulervm}{60}
843 \else
844 \ifmt@symbolgreek
845 \DeclareMathSymbol{\alpha}{\mathord}{\mtpsymbol}{61}
846 \DeclareMathSymbol{\beta}{\mathord}{\mtpsymbol}{62}
847 \DeclareMathSymbol{\gamma}{\mathord}{\mtpsymbol}{67}
848 \DeclareMathSymbol{\delta}{\mathord}{\mtpsymbol}{64}
849 \DeclareMathSymbol{\epsilon}{\mathord}{\mtpsymbol}{65}
850 \DeclareMathSymbol{\zeta}{\mathord}{\mtpsymbol}{7A}
851 \DeclareMathSymbol{\eta}{\mathord}{\mtpsymbol}{68}
852 \DeclareMathSymbol{\theta}{\mathord}{\mtpsymbol}{71}
853 \DeclareMathSymbol{\iota}{\mathord}{\mtpsymbol}{69}
854 \DeclareMathSymbol{\kappa}{\mathord}{\mtpsymbol}{6B}
855 \DeclareMathSymbol{\lambda}{\mathord}{\mtpsymbol}{6C}
856 \DeclareMathSymbol{\mu}{\mathord}{\mtpsymbol}{6D}
857 \DeclareMathSymbol{\nu}{\mathord}{\mtpsymbol}{6E}
858 \DeclareMathSymbol{\xi}{\mathord}{\mtpsymbol}{78}
859 \let\omicron\undefined
860 \DeclareMathSymbol{\omicron}{\mathord}{\mtpsymbol}{6F}
861 \DeclareMathSymbol{\pi}{\mathord}{\mtpsymbol}{70}
862 \DeclareMathSymbol{\rho}{\mathord}{\mtpsymbol}{72}
863 \DeclareMathSymbol{\sigma}{\mathord}{\mtpsymbol}{73}
864 \DeclareMathSymbol{\tau}{\mathord}{\mtpsymbol}{74}
865 \DeclareMathSymbol{\upsilon}{\mathord}{\mtpsymbol}{75}
866 \DeclareMathSymbol{\phi}{\mathord}{\mtpsymbol}{66}
867 \DeclareMathSymbol{\chi}{\mathord}{\mtpsymbol}{63}
868 \DeclareMathSymbol{\psi}{\mathord}{\mtpsymbol}{79}
869 \DeclareMathSymbol{\omega}{\mathord}{\mtpsymbol}{77}
870 \let\varepsilon=\epsilon
871 \DeclareMathSymbol{\vartheta}{\mathord}{\mtpsymbol}{4A}
872 \DeclareMathSymbol{\varpi}{\mathord}{\mtpsymbol}{76}
873 \let\varrho=\rho
874 \DeclareMathSymbol{\varsigma}{\mathord}{\mtpsymbol}{56}
875 \DeclareMathSymbol{\varphi}{\mathord}{\mtpsymbol}{6A}
876 \DeclareMathSymbol{\partial}{\mathord}{\mtpsymbol}{B6}
877 \DeclareMathSymbol{\wp}{\mathord}{\mtpsymbol}{C3}
878 \fi\fi\fi
879 %%
880 \ifmt@LGRgreek
881 \DeclareMathSymbol{\Alpha}{\mathalpha}{\mtlgrfontupper}{65}
882 \DeclareMathSymbol{\Beta}{\mathalpha}{\mtlgrfontupper}{66}
883 \DeclareMathSymbol{\Gamma}{\mathalpha}{\mtlgrfontupper}{71}
884 \DeclareMathSymbol{\Delta}{\mathalpha}{\mtlgrfontupper}{68}
885 \DeclareMathSymbol{\Epsilon}{\mathalpha}{\mtlgrfontupper}{69}
886 \DeclareMathSymbol{\Zeta}{\mathalpha}{\mtlgrfontupper}{90}
887 \DeclareMathSymbol{\Eta}{\mathalpha}{\mtlgrfontupper}{72}
888 \DeclareMathSymbol{\Theta}{\mathalpha}{\mtlgrfontupper}{74}
889 \DeclareMathSymbol{\Iota}{\mathalpha}{\mtlgrfontupper}{73}
890 \DeclareMathSymbol{\Kappa}{\mathalpha}{\mtlgrfontupper}{75}
891 \DeclareMathSymbol{\Lambda}{\mathalpha}{\mtlgrfontupper}{76}
892 \DeclareMathSymbol{\Mu}{\mathalpha}{\mtlgrfontupper}{77}

```

```

893 \DeclareMathSymbol{\Nu}{\mathalpha}{\mtlgrfontupper}{78}
894 \DeclareMathSymbol{\Xi}{\mathalpha}{\mtlgrfontupper}{88}
895 \DeclareMathSymbol{\Omicron}{\mathalpha}{\mtlgrfontupper}{79}
896 \DeclareMathSymbol{\Pi}{\mathalpha}{\mtlgrfontupper}{80}
897 \DeclareMathSymbol{\Rho}{\mathalpha}{\mtlgrfontupper}{82}
898 \DeclareMathSymbol{\Sigma}{\mathalpha}{\mtlgrfontupper}{83}
899 \DeclareMathSymbol{\Tau}{\mathalpha}{\mtlgrfontupper}{84}
900 \DeclareMathSymbol{\Upsilon}{\mathalpha}{\mtlgrfontupper}{85}
901 \DeclareMathSymbol{\Phi}{\mathalpha}{\mtlgrfontupper}{70}
902 \DeclareMathSymbol{\Chi}{\mathalpha}{\mtlgrfontupper}{81}
903 \DeclareMathSymbol{\Psi}{\mathalpha}{\mtlgrfontupper}{89}
904 \DeclareMathSymbol{\Omega}{\mathalpha}{\mtlgrfontupper}{87}
905 %
906 \DeclareMathSymbol{\alpha}{\mathalpha}{\mtlgrfont}{97}
907 \DeclareMathSymbol{\beta}{\mathalpha}{\mtlgrfont}{98}
908 \DeclareMathSymbol{\gamma}{\mathalpha}{\mtlgrfont}{103}
909 \DeclareMathSymbol{\delta}{\mathalpha}{\mtlgrfont}{100}
910 \DeclareMathSymbol{\epsilon}{\mathalpha}{\mtlgrfont}{101}
911 \DeclareMathSymbol{\zeta}{\mathalpha}{\mtlgrfont}{122}
912 \DeclareMathSymbol{\eta}{\mathalpha}{\mtlgrfont}{104}
913 \DeclareMathSymbol{\theta}{\mathalpha}{\mtlgrfont}{106}
914 \DeclareMathSymbol{\iota}{\mathalpha}{\mtlgrfont}{105}
915 \DeclareMathSymbol{\kappa}{\mathalpha}{\mtlgrfont}{107}
916 \DeclareMathSymbol{\lambda}{\mathalpha}{\mtlgrfont}{108}
917 \DeclareMathSymbol{\mu}{\mathalpha}{\mtlgrfont}{109}
918 \DeclareMathSymbol{\nu}{\mathalpha}{\mtlgrfont}{110}
919 \DeclareMathSymbol{\xi}{\mathalpha}{\mtlgrfont}{120}
920 \DeclareMathSymbol{\omicron}{\mathalpha}{\mtlgrfont}{111}
921 \DeclareMathSymbol{\pi}{\mathalpha}{\mtlgrfont}{112}
922 \DeclareMathSymbol{\rho}{\mathalpha}{\mtlgrfont}{114}
923 \DeclareMathSymbol{\varsigma}{\mathalpha}{\mtlgrfont}{99}
924 \DeclareMathSymbol{\sigma}{\mathalpha}{\mtlgrfont}{115}
925 \DeclareMathSymbol{\tau}{\mathalpha}{\mtlgrfont}{116}
926 \DeclareMathSymbol{\upsilon}{\mathalpha}{\mtlgrfont}{117}
927 \DeclareMathSymbol{\phi}{\mathalpha}{\mtlgrfont}{102}
928 \DeclareMathSymbol{\chi}{\mathalpha}{\mtlgrfont}{113}
929 \DeclareMathSymbol{\psi}{\mathalpha}{\mtlgrfont}{121}
930 \DeclareMathSymbol{\omega}{\mathalpha}{\mtlgrfont}{119}
931 \DeclareMathSymbol{\digamma}{\mathalpha}{\mtlgrfont}{147}
932 \DeclareMathSymbol{\Digamma}{\mathalpha}{\mtlgrfont}{195}
933 % cf http://milde.users.sourceforge.net/LGR/lgrxenc.def.html
934 % et greek.ldf du package babel
935 \fi

```

\inodot In v1.0, I had them of type mathord, here I choose mathalpha. If I used \i and \j
\jnodot from the text font the problem would be with the fontsize, if in scriptstyle. The
amsmath \text would do the trick.

```

936 \edef\mt@enc{\m@stextenc}
937 \mt@proceedtrue
938 \ifx\mt@enc\mt@eui % xetex and unicode font
939 \XeTeXmathchardef\inodot="7 "\the\symmtletterfont "0131 \relax
940 \XeTeXmathchardef\jnodot="7 "\the\symmtletterfont "0237 \relax
941 \else

```

```

942 \ifx\mt@enc\mt@euui % luatex and unicode font
943   \luatexUmathchardef\inodot="7 "\the\symmtletterfont "0131 \relax
944   \luatexUmathchardef\jnodot="7 "\the\symmtletterfont "0237 \relax
945 \else
946 \ifx\mt@enc\mt@ti % T1
947   \DeclareMathSymbol{\inodot}{\mathalpha}{mtletterfont}{25}
948   \DeclareMathSymbol{\jnodot}{\mathalpha}{mtletterfont}{26}
949 \else
950 \ifx\mt@enc\mt@oti % OT1
951   \DeclareMathSymbol{\inodot}{\mathalpha}{mtletterfont}{16}
952   \DeclareMathSymbol{\jnodot}{\mathalpha}{mtletterfont}{17}
953 \else
954 \ifx\mt@enc\mt@lyi % LY1
955   \DeclareMathSymbol{\inodot}{\mathalpha}{mtletterfont}{16}
956   \DeclareMathSymbol{\jnodot}{\mathalpha}{mtletterfont}{17}
957 \else
958   \ifXeTeX\mt@proceedfalse\else\ifLuaTeX\mt@proceedfalse\else
959     \DeclareMathSymbol{\inodot}{\mathalpha}{mtletterfont}
960     {\expandafter\the\expandafter\csname\mt@enc\string\i\endcsname}
961     \DeclareMathSymbol{\jnodot}{\mathalpha}{mtletterfont}
962     {\expandafter\the\expandafter\csname\mt@enc\string\j\endcsname}
963     \fi\fi
964 \fi\fi\fi\fi\fi
965 \ifmt@defaultimath\else
966   \ifmt@proceed
967     \renewcommand{\imath}{\inodot}
968     \renewcommand{\jmth}{\jnodot}
969     \let\mt@oldi\i \let\mt@oldj\j
970     \DeclareRobustCommand{\i}{\ifmmode\inodot\else\mt@oldi\fi}
971     \DeclareRobustCommand{\j}{\ifmmode\jnodot\else\mt@oldj\fi}
972   \fi
973 \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

```

974 \edef\mt@enc{\m@stextenc} %% rather one too many than sorry
975 \ifmt@mathaccents
976 \ifx\mt@ti\mt@enc
977   \DeclareMathAccent{\acute}{\mathalpha}{moperatorfont}{1}
978   \DeclareMathAccent{\grave}{\mathalpha}{moperatorfont}{0}
979   \DeclareMathAccent{\ddot}{\mathalpha}{moperatorfont}{4}
980   \DeclareMathAccent{\tilde}{\mathalpha}{moperatorfont}{3}
981   \DeclareMathAccent{\bar}{\mathalpha}{moperatorfont}{9}
982   \DeclareMathAccent{\breve}{\mathalpha}{moperatorfont}{8}
983   \DeclareMathAccent{\check}{\mathalpha}{moperatorfont}{7}
984   \DeclareMathAccent{\hat}{\mathalpha}{moperatorfont}{2}
985   \DeclareMathAccent{\dot}{\mathalpha}{moperatorfont}{10}
986   \DeclareMathAccent{\mathring}{\mathalpha}{moperatorfont}{6}
987 \else

```

```

988 \DeclareMathAccent{\acute}{\mathalpha}{mtoperatorfont}{19}
989 \DeclareMathAccent{\grave}{\mathalpha}{mtoperatorfont}{18}
990 \DeclareMathAccent{\ddot}{\mathalpha}{mtoperatorfont}{127}
991 \DeclareMathAccent{\tilde}{\mathalpha}{mtoperatorfont}{126}
992 \DeclareMathAccent{\bar}{\mathalpha}{mtoperatorfont}{22}
993 \DeclareMathAccent{\breve}{\mathalpha}{mtoperatorfont}{21}
994 \DeclareMathAccent{\check}{\mathalpha}{mtoperatorfont}{20}
995 \DeclareMathAccent{\hat}{\mathalpha}{mtoperatorfont}{94}
996 \DeclareMathAccent{\dot}{\mathalpha}{mtoperatorfont}{95}
997 \DeclareMathAccent{\mathring}{\mathalpha}{mtoperatorfont}{23}
998 \ifx\mt@lyi\mt@enc % LY1 encoding
999 \DeclareMathAccent{\dot}{\mathalpha}{mtoperatorfont}{5}
1000 \else
1001 \ifx\mt@oti\mt@enc\else
1002 \typeout{** mathastext: math accents have been assumed to be^^J%
1003 ** as in OT1 encoding.}
1004 \fi
1005 \fi
1006 \fi\fi

```

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

```

1007 \ifmt@defaultsizes\else
1008 \providecommand\@xxxpt{29.86}
1009 \providecommand\@xxxvpt{35.83}
1010 \ifmt@twelve
1011 \def\Huge{\@setfontsize\Huge\@xxxpt{36}}
1012 \def\HUGE{\@setfontsize\HUGE\@xxxvpt{43}}
1013 \typeout{** \protect\Huge\space and \protect\HUGE\space have been (re)-defined.}
1014 \else
1015 \def\HUGE{\@setfontsize\HUGE\@xxxpt{36}}
1016 \typeout{** \protect\HUGE\space has been (re)-defined.}
1017 \fi

```

I choose rather big subscripts.

```

1018 \def\defaultscriptratio{.8333}
1019 \def\defaultscriptscriptratio{.7}
1020 \DeclareMathSizes{9}{9}{7}{5}
1021 \DeclareMathSizes{\@xpt}{\@xpt}{8}{6}
1022 \DeclareMathSizes{\@xipt}{\@xipt}{9}{7}
1023 \DeclareMathSizes{\@xipt}{\@xipt}{10}{8}
1024 \DeclareMathSizes{\@xivpt}{\@xivpt}{\@xipt}{10}
1025 \DeclareMathSizes{\@xvipt}{\@xvipt}{\@xivpt}{\@xipt}
1026 \DeclareMathSizes{\@xxpt}{\@xxpt}{\@xvipt}{\@xivpt}
1027 \DeclareMathSizes{\@xxvpt}{\@xxvpt}{\@xxpt}{\@xvipt}
1028 \DeclareMathSizes{\@xxxpt}{\@xxxpt}{\@xxvpt}{\@xxpt}
1029 \DeclareMathSizes{\@xxxvpt}{\@xxxvpt}{\@xxxpt}{\@xxvpt}
1030 \typeout{** mathastext has declared larger sizes for subscripts.^^J%
1031 ** To keep LaTeX defaults, use option 'defaultmathsizes'.}
1032 \fi

```

Scaling mechanism for the Symbol font.

```

1033 \AtBeginDocument{
1034 \ifmt@needsymbol

```

```

1035 \DeclareFontFamily{U}{psy}{}
1036 \DeclareFontShape{U}{psy}{m}{n}{<->s*[\psy@scale] psy}{r}{}
1037 \fi
1038 }

```

Time to reactivate the standard font infos and warnings and we are done.

```

1039 \mt@font@info@on
1040 \endinput

```