

L^AT_EX Class for *Association for Computing Machinery**

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Abstract

This package provides a class for typesetting publications of Association for Computing Machinery.

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1 Introduction

Association for Computing Machinery is the world's largest educational and scientific computing society, which delivers resources that advance computing as a science and a profession¹. It was one of the early adopters of \TeX for its typesetting.

It provided several different classes for a number of journal and conference proceedings. Unfortunately during the years since these classes were written, the code was patched many times, and the support of the different versions of the classes became difficult.

This package provides the uniform interface for all ACM publications. It is intended to replace all different classes and packages and provide an up to date \LaTeX package.

The package uses only free \TeX packages and fonts included in \TeX Live, Mik \TeX and other popular \TeX distributions. It is intended to be published in these distributions itself, which minimizes users' efforts in the installation and support of the package.

I am grateful to Matthew Fluet, John Owens, Craig Rodkin, Bernard Rous, David Shamma, Stephen Spencer and many others for their invaluable help.

The development version of the package is available at <https://github.com/borisveytsman/acmart>.

2 User's guide

2.1 Installation

Most probably, you already have this package installed in your favorite \TeX distribution; if not, you may want to upgrade. You may need to upgrade it anyway since the package uses a number relatively recent packages, especially the ones related to the fonts.

If you decide to install the package yourself, follow the standard rules:

1. Run `latex on acmart.ins`. This will produce the file `acmart.cls`.
2. Put the file `acmart.cls` and the bibliography files `*.bst` to the places where \LaTeX can find them (see [1] or the documentation for your \TeX system).
3. Update the database of file names. Again, see [1] or the documentation for your \TeX system for the system-specific details.
4. The file `acmart.pdf` provides the documentation for the package (this is the file you are probably reading now).

As an alternative to items 2 and 3 you can just put the files in the working directory where your `.tex` file is.

The class uses a number of other packages. They are included in all major \TeX distributions (\TeX Live, Mac \TeX , Mik \TeX) of 2015 and later, so you probably have them installed. Just in case here is the list of these packages:

- *algorithm2e*, <http://www.ctan.org/pkg/algorithm2e>

¹<http://www.acm.org/>

- *amscs*, <http://www.ctan.org/pkg/amscs>
- *amsfonts*, <http://www.ctan.org/pkg/amsfonts>
- *amsmath*, <http://www.ctan.org/pkg/amsmath>
- *booktabs*, <http://www.ctan.org/pkg/booktabs>
- *caption*, <http://www.ctan.org/pkg/caption>
- *comment*, <http://www.ctan.org/pkg/comment>
- *environ*, <http://www.ctan.org/pkg/environ>
- *fancyhdr*, <http://www.ctan.org/pkg/fancyhdr>
- *float*, <http://www.ctan.org/pkg/float>
- *fontaxes*, <http://www.ctan.org/pkg/fontaxes>
- *geometry*, <http://www.ctan.org/pkg/geometry>
- *graphics*, <http://www.ctan.org/pkg/graphics>
- *hyperref*, <http://www.ctan.org/pkg/hyperref>
- *ifluatex*, <http://www.ctan.org/pkg/ifluatex>
- *ifxetex*, <http://www.ctan.org/pkg/ifxetex>
- *inconsolata*, <http://www.ctan.org/pkg/inconsolata>
- *kastrup*, <http://www.ctan.org/pkg/kastrup>
- *libertine*, <http://www.ctan.org/pkg/libertine>
- *manyfoot*, <http://www.ctan.org/pkg/manyfoot>
- *microtype*, <http://www.ctan.org/pkg/microtype>
- *mptopdf*, <http://www.ctan.org/pkg/mptopdf>
- *ms*, <http://www.ctan.org/pkg/ms>
- *mweights*, <http://www.ctan.org/pkg/mweights>
- *natbib*, <http://www.ctan.org/pkg/natbib>
- *nccfoots*, <http://www.ctan.org/pkg/nccfoots>
- *newtx*, <http://www.ctan.org/pkg/newtx>
- *oberdiek*, <http://www.ctan.org/pkg/oberdiek>
- *pdftex-def*, <http://www.ctan.org/pkg/pdftex-def>

- *resize*, <http://www.ctan.org/pkg/resize>
- *setspace*, <http://www.ctan.org/pkg/setspace>
- *tools*, <http://www.ctan.org/pkg/tools>
- *totpages*, <http://www.ctan.org/pkg/totpages>
- *trimspaces*, <http://www.ctan.org/pkg/trimspaces>
- *upquote*, <http://www.ctan.org/pkg/upquote>
- *url*, <http://www.ctan.org/pkg/url>
- *xcolor*, <http://www.ctan.org/pkg/xcolor>
- *xkeyval*, <http://www.ctan.org/pkg/xkeyval>

2.2 Invocation and options

To use the class put in the preamble of your document

```
\documentclass[<options>]{acmart}
```

There are several options corresponding to the type of the document and its general appearance. They are described below. Generally speaking, the options have key=value forms, for example

```
\documentclass[format=acmsmall, screen=true, review=false]{acmart}
```

The option `format` describes the format of the output. There are several possible values for this option, for example,

```
\documentclass[format=acmtog]{acmart}
```

Actually the words `format=` can be omitted, e.g.,

```
\documentclass[acmtog, review=false]{acmart}
```

The possible formats are listed in Table 1. Note that formats starting with `acm` are intended for journals and transactions, while formats starting with `sig` are intended for proceedings published as books.

There are several Boolean options which can take true or false values. They are listed in Table 2. The words `=true` can be omitted when setting the Boolean option, so instead of `screen=true` one can write just `screen`, for example,

```
\documentclass[acmsmall, screen, review]{acmart}
```

Table 1: The possible values for the format option

| Value | Meaning |
|------------|---|
| manuscript | A manuscript. This is the default |
| acmsmall | Small single column format, used for CIE, CSUR, JACM, JDIQ, JEA, JERIC, JETC, TAAS, TACCESS, TACO, TALG, TALLIP (formerly TALIP), TCPS, TEAC, TECS, TIIS, TISSEC, TIST, TKDD, TMIS, TOCE, TOCHI, TOCL, TOCS, TOCT, TODAES, TODS, TOIS, TOIT, TOMACS, TOMM (formerly TOMCCAP), TOMPECS, TOMS, TOPC, TOPLAS, TOPS, TOS, TOSEM, TOSN, TRET, TSAS, TSC, TSLP, TWEB. |
| acmlarge | Large single column format, used for JOCCH, TAP |
| acmtog | Large double column format, used for TOG |
| sigconf | Proceedings format for most of ACM conferences (with the exceptions listed below) |
| siggraph | Proceedings format for SIGGRAPH and SIGGRAPH Asia conferences, published in ACM Transactions on Graphics journal issues |
| sigplan | Proceedings format for SIGPLAN conferences |
| sigchi | Proceedings format for SIGCHI conferences |
| sigchi-a | Format for SIGCHI extended abstract |

The option `review` is useful when combined with the `manuscript` format option: it provides a version suitable for reviewers and copyeditors.

The option `screen` may in the future involve additional features suitable for on-screen versions of the articles.

The option `natbib` is used when the corresponding BibTeX style is based on `natbib`.

The option `anonymous` is used for anonymous review process: all author information becomes obscured.

2.3 Topmatter commands

A number of commands set up *top matter* information, or, in the computer science jargon, *metadata* for the article. They establish the publication name, article title, authors,

Table 2: Boolean options

| Option | Default | Meaning |
|---------------|---------|--|
| review | false | A review version: lines are numbered, hyperlinks are colored |
| screen | false | A screen version: hyperlinks are colored |
| natbib | false | Whether to use <code>natbib</code> package (see Section 2.9) |
| anonymous | false | Whether to make author(s) anonymous |
| authorversion | false | Whether to generate a special version for authors' personal use or posting (see Section 2.3) |

doi and other data. Some of these commands, like `\title` or `\author`, should be put by the authors. Others, like `\acmVolume` or `\acmDOI`—by the editors. Below we describe these commands and mention who should issue them. These macros should be used *before* the `\maketitle` command. Note that in the previous versions of ACM classes some of these commands should be used before `\maketitle`, and some after it. Now they all must be used before `\maketitle`.

The class internally loads `amsart` class, so many top matter commands are inherited from `amsart` [2].

`\acmJournal` The macro `\acmJournal{<shortName>}` sets the name of the journal or transaction for journals and transactions. The argument is the short name of the publication *in uppercase*, for example,

```
\acmJournal{TOMS}
```

The currently recognized journals are listed in Table 3. Note that conference proceedings published in *book* form do not set this macro.

It is expected that this command is inserted by the author of the manuscript when she decides to which journal to submit the manuscript.

`\acmConference` The macro `\acmConference[<short name>]{<name>}{<date>}{<venue>}` is used for conference proceedings published in the book form. The arguments are the following:

short name: the abbreviated name of the conference (optional).

name: the name of the conference *or* the name of the book as set by the editor.

date: the date(s) of the conference.

venue: the place of the conference.

Examples:

```
\acmConference[TD'15]{Technical Data Conference}{November
12--16}{Dallas, TX, USA}
\acmConference{SA'15 Art Papers}{November 02--06, 2015}{Kobe, Japan}
```

Normally this command is entered either by the editor or by the typesetter.

`\title` The command `\title`, as in `amsart` class, has two arguments: one optional, and one mandatory:

```
\title[<ShortTitle>]{<FullTitle>}
```

The mandatory argument is the full title of the article. The optional argument, if present, defines the shorter version of the title for running heads. If the optional argument is absent, the full title is used instead.

It is expected that this command is inserted by the author of the manuscript.

`\subtitle` Besides title, ACM classes allow subtitle, set with the `\subtitle{<subtitle>}` macro.

`\author` The interface for specifying the authors and their affiliations is close the the one of
`\affiliation` `amsart` [3] (and different from the standard \LaTeX). For each author a separate command
`\email`

Table 3: ACM publications and arguments of the \acmJournal command

| Abbreviation | Publication |
|--------------|--|
| CIE | ACM Computers in Entertainment |
| CSUR | ACM Computing Surveys |
| JACM | Journal of the ACM |
| JDIQ | ACM Journal of Data and Information Quality |
| JEA | ACM Journal of Experimental Algorithmics |
| JERIC | ACM Journal of Educational Resources in Computing |
| JETC | ACM Journal on Emerging Technologies in Computing Systems |
| JOCCH | ACM Journal on Computing and Cultural Heritage |
| TAAS | ACM Transactions on Autonomous and Adaptive Systems |
| TACCESS | ACM Transactions on Accessible Computing |
| TACO | ACM Transactions on Architecture and Code Optimization |
| TALG | ACM Transactions on Algorithms |
| TALLIP | ACM Transactions on Asian and Low-Resource Language Information Processing |
| TAP | ACM Transactions on Applied Perception |
| TCPS | ACM Transactions on Cyber-Physical Systems |
| TEAC | ACM Transactions on Economics and Computation |
| TECS | ACM Transactions on Embedded Computing Systems |
| TIIS | ACM Transactions on Interactive Intelligent Systems |
| TISSEC | ACM Transactions on Information and System Security |
| TIST | ACM Transactions on Intelligent Systems and Technology |
| TKDD | ACM Transactions on Knowledge Discovery from Data |
| TMIS | ACM Transactions on Management Information Systems |
| TOCE | ACM Transactions on Computing Education |
| TOCHI | ACM Transactions on Computer-Human Interaction |
| TOCL | ACM Transactions on Computational Logic |
| TOCS | ACM Transactions on Computer Systems |
| TOCT | ACM Transactions on Computation Theory |
| TODAES | ACM Transactions on Design Automation of Electronic Systems |
| TODS | ACM Transactions on Database Systems |
| TOG | ACM Transactions on Graphics |
| TOIS | ACM Transactions on Information Systems |
| TOIT | ACM Transactions on Internet Technology |
| TOMACS | ACM Transactions on Modeling and Computer Simulation |
| TOMM | ACM Transactions on Multimedia Computing, Communications and Applications |
| TOMPECS | ACM Transactions on Modeling and Performance Evaluation of Computing Systems |
| TOMS | ACM Transactions on Mathematical Software |
| TOPC | ACM Transactions on Parallel Computing |
| TOPLAS | ACM Transactions on Programming Languages and Systems |
| TOPS | ACM Transactions on Privacy and Security |
| TOS | ACM Transactions on Storage |
| TOSEM | ACM Transactions on Software Engineering and Methodology |
| TOSN | ACM Transactions on Sensor Networks |
| TRETS | ACM Transactions on Reconfigurable Technology and Systems |
| TSAS | ACM Transactions on Spatial Algorithms and Systems |
| TSC | ACM Transactions on Social Computing |
| TSLP | ACM Transactions on Speech and Language Processing |
| TWEB | ACM Transactions on the Web |

`\author` should be used, followed by `\affiliation` and `\email`. If several authors share affiliations, in journal formats like `acmsmall` or `acmlarge` one may put the affiliation after all these authors, for example:

```
\author{A. U. Thor}
\email{author@nsw.au.edu}
\affiliation{University of New South Wales}
\author{A. N. Other}
\author{C. O. Respondent}
\affiliation{University of Pennsylvania}
```

In the cases of overlapping affiliations it is advisable to repeat the full list, for example,

```
\author{A. U. Thor}
\affiliation{University of New South Wales, Australia}
\email{author@nsw.edu.au}
\author{A. N. Other}
\affiliation{University of Pennsylvania, USA and University of New South
Wales, Australia}
\email{other@upenn.edu}
```

For *conferences* the affiliations should *always* be repeated, even if they are shared between the authors.

Note that old ACM conference formats did not allow for more than six authors and required some efforts from the authors to achieve alignment. The new format is much better in this.

It is expected that these commands are inserted by the author of the manuscript.

`\thanks` Like `amsart` (and unlike standard \LaTeX), we allow `\thanks` only *outside* of commands `\title` and `\author`. Example:

```
\thanks{This work is supported by the Widget Corporation Grant
\#312-001.\\
Author's address: D. Pineo, Kingsbury Hall, 33 Academic Way, Durham,
N.H. 03824; email: dspineo@comcast.net; Colin Ware, Jere A. Chase
Ocean Engineering Lab, 24 Colovos Road, Durham, NH 03824; email:
cware@ccom.unh.edu;
Sean Fogarty, (Current address) NASA Ames Research Center, Moffett
Field, California 94035.}
```

It is expected that this command is inserted by the author of the manuscript.

`\titlenote` While the command `\thanks` generates a note without footnote mark, sometimes
`\subtitlenote` the authors might need notes more tightly connected to the title, subtitle or author. The
`\authornote` commands `\titlenote`, `\subtitlenote` and `\authornote` that follow the corresponding
commands (`\title`, `\subtitle` and `\author`) generate such notes, for example

```
\title{This is a title}
\titlenote{This is a titlenote}
\author{A. U. Thor}
```

`\authornote{This is an authornote}`

`\acmVolume` The macros `\acmVolume`, `\acmNumber`, `\acmArticle`, `\acmYear` and `\acmMonth` are
`\acmNumber` inserted by the editor and set the journal volume, issue, article number, year and month
`\acmArticle` correspondingly. The arguments of all these commands, including `\acmMonth` is numer-
`\acmYear` ical, including `\acmMonth`, for example,
`\acmMonth`

```
\acmVolume{9}  
\acmNumber{4}  
\acmArticle{39}  
\acmYear{2010}  
\acmMonth{3}
```

`\acmArticleSeq` The articles in the same issue of a journal have *sequential number*. It is used to
position black blob in same formats. By default it is the same as article number, but the
command `\acmArticleSeq{<n>}` can be used to change it:

```
\acmArticle{39}    % The sequence number will be 39 by default  
\acmArticleSeq{5} % We rededine it to 5
```

`\acmPrice` The macro `\acmPrice{<price>}` sets the price for the article (by default 15.00), for
example,

```
\acmPrice{25.00}
```

`\acmISBN` Book-like volumes have ISBN numbers attached to them. The macro `\acmISBN{<ISBN>}`
sets it. Normally it is set by the typesetter, for example,

```
\acmISBN{978-1-4503-3916-2}
```

`\acmDOI` The macro `\acmDOI{<DOI>}` sets the DOI number of the article, for example,

```
\acmDOI{10.1145/9999997.9999999}
```

It is normally set by the typesetter.

`\acmBadgeR` Some conference articles get special distinction, for example, the artifact evaluation
`\acmBadgeL` for PPOPP 2016 (see <http://ctuning.org/ae/ppopp2016.html>). These articles display
special badges supplied by the conference organizers. The class provides commands to
add these badges: `\acmBadgeR[<url>]{<graphics>}` and `\acmBadgeL[<url>]{<graphics>}`.
The first command puts the badge to the right of the title, and the second one—to the
left. The exception is the sigchi-a mode for SIGCHI Extended abstract, which puts
the badges on the left margin. The argument have the following meaning: `[<url>]`, if
provided, sets the link to the badge authority in the screen version, while `{<graphics>}`
sets the graphics file with the badge image. The file must be a cropped square, which is

scaled to a standard size in the output. For example, if the badge image is `ae-logo.pdf`, the command is

```
\acmBadgeR[http://ctuning.org/ae/ppopp2016.html]{ae-logo}
```

`\startPage` The macro `\startPage{<page>}` sets the first page of the article in the journal or book. It is used by the typesetter.

`\terms` The macros `\terms{<term, term,...>}` and `\keywords{<keyword, keyword,...>}` set the main terms and the additional keywords for the article. Term and keywords must be separated by commas, for example,

```
\terms{wireless, interference}
\keywords{wireless sensor networks, media access control,
multi-channel, radio interference, time synchronization}
```

`CCSXML` ACM publications are classified according to the ACM Computing Classification Scheme (CCS). CCS codes are used both in the typeset version of the publications *and* in the metadata in the various databases. Therefore you need to provide both \TeX commands and XML metadata with the paper.

The tool at <http://dl.acm.org/ccs.cfm> can be used to generate CCS codes. After you select the topics, click on “Generate CCS codes” to get the result like the following:

```
\begin{CCSXML}
<ccs2012>
  <concept>
    <concept_id>10010520.10010553.10010562</concept_id>
    <concept_desc>Computer systems organization~Embedded systems</concept_desc>
    <concept_significance>500</concept_significance>
  </concept>
  <concept>
    <concept_id>10010520.10010575.10010755</concept_id>
    <concept_desc>Computer systems organization~Redundancy</concept_desc>
    <concept_significance>300</concept_significance>
  </concept>
  <concept>
    <concept_id>10010520.10010553.10010554</concept_id>
    <concept_desc>Computer systems organization~Robotics</concept_desc>
    <concept_significance>100</concept_significance>
  </concept>
  <concept>
    <concept_id>10003033.10003083.10003095</concept_id>
    <concept_desc>Networks~Network reliability</concept_desc>
    <concept_significance>100</concept_significance>
  </concept>
</ccs2012>
\end{CCSXML}

\ccsdesc[500]{Computer systems organization~Embedded systems}
```

Table 4: Parameters for `\setcopyright` command

| Parameter | Meaning |
|-----------------------------|--|
| <code>none</code> | The copyright and permission information is not typeset (this is the option for some ACM conferences). |
| <code>acmcopyright</code> | The authors transfer the copyright to ACM (the “traditional” choice). |
| <code>acmlicensed</code> | The authors retain the copyright but license the publication rights to ACM. |
| <code>rightsretained</code> | The authors retain the copyright and publication rights to themselves or somebody else. |
| <code>usgov</code> | All the authors are employees of the US Government. |
| <code>usgovmixed</code> | Some authors are employees of the US Government. |
| <code>cagov</code> | All the authors are employees of the Canadian Government. |
| <code>cagovmixed</code> | Some authors are employees of the Canadian Government. |

```
\ccsdesc[300]{Computer systems organization~Redundancy}
\ccsdesc{Computer systems organization~Robotics}
\ccsdesc[100]{Networks~Network reliability}
```

You need to just copy this code and paste it in your paper anywhere before `\maketitle`.

`\setcopyright` There are several possibilities for the copyright of the papers published by ACM: the authors may transfer the rights to ACM, license them to ACM, some or all authors might be employees of the US or Canada Government, etc. Accordingly the command `\setcopyright{...}` is introduced. Its argument is the copyright status of the paper, for example, `\setcopyright{acmcopyright}`. The possible values for this command are listed in Table 4.

The ACM submission software should generate the right command for you to paste into your file.

`\copyrightyear` Each copyright statement must have the year of copyright. By default it is the same as `\acmYear`, but you can override this decision using the macro `\copyrightyear`, e.g.,

```
\acmYear{2016}
\copyrightyear{2015}
```

There is a special case for a personal copy that the authors may be allowed to generate for their use or a posting on a personal site (check the instructions for the specific journal or conference for the details). The document option `authorversion=true` produces the special form of the copyright statement for this case. Note that you still need the `\setcopyright` command and (optionally) `\copyrightyear` command to tell T_EX about the copyright owner and year. Also, you should be aware that due to the different sizes of the permission blocks for the printed version and authors’ version the page breaks might be different between them.

Table 5: Settings for `\settopmatter` command

| Parameter | Values | Meaning |
|-----------------------|------------|--|
| <code>printccs</code> | true/false | Whether to print CCS categories |
| <code>printbib</code> | true/false | Whether to print ACM bibliographic entry |

| | |
|----------------------------|--|
| <code>abstract</code> | The environment <code>abstract</code> must <i>precede</i> <code>\maketitle</code> command. Again, this is different from the standard \LaTeX . |
| <code>teaserfigure</code> | <p>A special kind of figure is used for many two-column conference proceedings. This figure is placed just after the authors, but before the main text. The environment <code>teaserfigure</code> is used for these figures. This environment must be used <i>before</i> <code>\maketitle</code>, for example,</p> <pre> \begin{teaserfigure} \includegraphics[width=\textwidth]{sampleteaser} \caption{This is a teaser} \label{fig:teaser} \end{teaserfigure} </pre> |
| <code>\settopmatter</code> | <p>Some information in the top matter is printed for certain journals or proceedings and suppressed for others. You may override these defaults using the command <code>\settopmatter{<settings>}</code>. The settings and their meanings are listed in Table 5. For example,</p> <pre> \settopmatter{printbib=false, printccs=true} </pre> |
| <code>\received</code> | <p>The command <code>\received[<stage>]{<date>}</code> sets the history of the publication. The <code>[<stage>]</code> argument is optional; the default is Received for the first date and revised for the subsequent ones. For example</p> <pre> \received{February 2007} \received[revised]{March 2009} \received[accepted]{June 2009} </pre> |
| <code>\maketitle</code> | The macro <code>\maketitle</code> must be the last command in the top matter group: i.e., it must follow the commands defined in this section. |
| <code>\shortauthors</code> | <p><i>After</i> the command <code>\maketitle</code> the macro <code>\shortauthors</code> stores the names of the authors for the running head. You may redefine it if the list of author's name is too long, e.g.,</p> <pre> \maketitle \renewcommand{\shortauthors}{Zhou et. al.} </pre> |

2.4 Algorithms

There now several good packages for typesetting algorithms [4, 5, 6], and the authors are now free to choose their favorite one.

2.5 Figures and tables

New ACM styles use the standard \LaTeX interface for figures and tables. There are some important items to be aware of, however.

1. The captions for figures must be entered *after* the figure bodies, and for the tables *before* the table bodies.
2. ACM uses the standard types for figures and tables and adds several new ones. In total there are following types:

figure, table: a standard figure or table, taking full text width in one-column formats and one column in two-column formats.

figure*, table* in two-column formats, a special figure or table taking full text width.

teaserfigure: a special figure before `\maketitle`.

sidebar, marginfigure, margintable: in the sigchi-a format, special sidebars, tables and figures on the margin.

3. Accordingly, when scaling the images, one should use the following sizes:
 - (a) For figure in one-column mode, figure* in two-column mode or teaserfigure—`\textwidth` (in the one-column you can also use `\columnwidth`, which coincides with `\textwidth` in this case).
 - (b) For figure in two-column mode—`\columnwidth`.
 - (c) For marginfigure—`\marginparwidth`.
 - (d) For figure* in SIGCHI Extended abstracts—`\fulltextwidth`.

It is strongly recommended to use the package `booktabs` [7] and follow its main principles of typography with respect to tables:

1. Never, ever use vertical rules.
2. Never use double rules.

It is also a good idea not to overuse horizontal rules.

For table *footnotes* you have several options described in TeX FAQ [1]. The simplest one is to use `\minipage` environment:

```
\begin{table}  
\caption{Simulation Configuration}  
\label{tab:conf}  
\begin{minipage}{\columnwidth}
```

```

\begin{center}
\begin{tabular}{ll}
\toprule
TERRAIN\footnote{This is a table footnote. This is a
    table footnote. This is a table footnote.} &
    (200\,m$\times$200\,m) Square\\
Node Number & 289\\
Node Placement & Uniform\\
Application & Many-to-Many/Gossip CBR Streams\\
Payload Size & 32 bytes\\
Routing Layer & GF\\
MAC Layer & CSMA/MMSN\\
Radio Layer & RADIO-ACCNOISE\\
Radio Bandwidth & 250Kbps\\
Radio Range & 20m--45m\\
\bottomrule
\end{tabular}
\end{center}
\bigskip
\footnotesize\emph{Source:} This is a table
sourcenote. This is a table sourcenote. This is a table
sourcenote.

\emph{Note:} This is a table footnote.
\end{minipage}
\end{table}

```

sidebar SIGCHI extended abstract extensively uses margin space. The package provides
 marginfigure three environments for this with option captions:
 margintable

sidebar: textual information on the margin

marginfigure: a figure on the margin

margintable: a table on the margin

\nocaptionrule SIGPLAN format uses rules between captions and float bodies. In some cases these
 \captionruleoff rules interfere with the material. The command \nocaptionrule before the caption (but
 \captionruleon inside figure or table) switches the rule off. The command \captionruleoff switches off
 caption rules for all subsequent figures, while the command \captionruleon switches
 them on. In other formats this command does not make any difference.

2.6 Theorems

ACM classes define two theorem styles and several pre-defined theorem environments:

acmplain: this is the style used for theorem, conjecture, proposition, lemma, corollary, and

acmdefinition: this is the style used for example and definition.

2.7 Online-only and offline-only material

`printonly` Some supplementary material in ACM publication is put online, but not in the printed
`screenonly` version. The text inside the environment `screenonly` will be typeset only when the option `screen` (see Section 2.2) is set to true. Conversely, the text inside the environment `printonly` is typeset only when this option is set to false. For example

```
\section{Supplementary materials}

\begin{printonly}
  This section is included in the online version of the paper.
\end{printonly}

\begin{screenonly}
  (The actual section).
\end{screenonly}
```

2.8 Note about anonymous mode

`anonsuppress` When the option `anonymous` is selected, \TeX suppresses author information (including number of authors) for a blind review. However, sometimes the information identifying the authors may be present in the body of the paper, for example, in the acknowledgements. The environment `anonsuppress` is used to suppress such information, for example

```
\section*{Acknowledgements}
\begin{anonsuppress}
  The authors wish to thank Prof. C.~O.~Lleague for her generous
  advices and the Society for Development of Oort Cloud for the
  financial support.
\end{anonsuppress}
```

2.9 Bibliography

The Boolean option `natbib` selects whether to use `natbib` package for bibliography. If you use `natbib`, then commands like `\citep` and `\citeauthor` are automatically supported. You may customize `\natbib` using `\setcitestyle` command, for example,

```
\setcitestyle{numbers,sort&compress}
```

ACM journals use `natbib` and the style `ACM-Reference-Format-Journals`.

Most ACM conference proceedings do *not* use `natbib`. SIGGRAPH conferences use `acmsiggraph` style. SIGCHI conferences use `SIGCHI-Reference-Format` style. The other conferences employ one of the four styles:

1. `acm-abbrev`

2. acm-alpha
3. acm-plain
4. acm-unsrt

The author should consult specific instructions about the style to choose.

2.10 Colors

While printed ACM publications are usually black and white, screen mode allows the use of colors. The ACM classes pre-define several colors according to [8]: ACMBBlue, ACMYellow, ACMOrange, ACMRed, ACMLightBlue, ACMGreen, ACMPurple, ACMDarkBlue. You can use them in the color assignments.

3 Implementation

3.1 Identification

We start with the declaration who we are. Most .dtx files put driver code in a separate driver file .drv. We roll this code into the main file, and use the pseudo-guard <gobble> for it.

```
1 <class>\NeedsTeXFormat{LaTeX2e}
2 <*gobble>
3 \ProvidesFile{acmart.dtx}
4 </gobble>
5 <class>\ProvidesClass{acmart}
6 [2016/05/14 v1.08 Typesetting articles for Association of
7 Computing Machinery]
```

And the driver code:

```
8 <*gobble>
9 \documentclass{ltxdoc}
10 \usepackage{array,booktabs,amsmath,graphicx,fancyvrb,tabularx}
11 \usepackage[tt=false]{libertine}
12 \usepackage[varqu]{zi4}
13 \usepackage[libertine]{newtxmath}
14 \usepackage[tableposition=top]{caption}
15 \usepackage{hypdoc}
16 \PageIndex
17 \CodelineIndex
18 \RecordChanges
19 \EnableCrossrefs
20 \begin{document}
21   \DocInput{acmart.dtx}
22 \end{document}
23 </gobble>
24 <*class>
25 \def\@classname{acmart}
```

3.2 Options

We need xkeyval since some of our options may have values:

```
26 \RequirePackage{xkeyval}
```

format The possible formats

```
27 \define@choicekey*+{acmart.cls}{format}[\ACM@format\ACM@format@nr]{%
28   manuscript, acmsmall, acmlarge, acmtog, sigconf, siggraph,
29   sigplan, sigchi, sigchi-a}[manuscript]{}{%
30   \ClassError{\@classname}{The option format must be manuscript,
31     acmsmall, acmlarge, acmtog, sigconf, siggraph,
32     sigplan, sigchi or sigchi-a}}
33 \def\@DeclareACMFormat#1{\DeclareOptionX{#1}{\setkeys{acmart.cls}{format=#1}}}
34 \@DeclareACMFormat{manuscript}
```

```

35 \@DeclareACMFormat{acmsmall}
36 \@DeclareACMFormat{acmlarge}
37 \@DeclareACMFormat{acmtog}
38 \@DeclareACMFormat{sigconf}
39 \@DeclareACMFormat{siggraph}
40 \@DeclareACMFormat{sigplan}
41 \@DeclareACMFormat{sigchi}
42 \@DeclareACMFormat{sigchi-a}
43 \ExecuteOptionsX{format}

\if@ACM@screen Whether we use screen mode
44 \define@boolkey+{acmart.cls}[@ACM@]{screen}[true]{%
45   \if@ACM@screen
46     \PackageInfo{\@classname}{Using screen mode}%
47   \else
48     \PackageInfo{\@classname}{Not using screen mode}%
49   \fi}{\PackageError{\@classname}{Option screen can be either true or
50     false}}
51 \ExecuteOptionsX{screen=false}

\if@ACM@review Whether we use review mode
52 \define@boolkey+{acmart.cls}[@ACM@]{review}[true]{%
53   \if@ACM@review
54     \PackageInfo{\@classname}{Using review mode}%
55   \else
56     \PackageInfo{\@classname}{Not using review mode}%
57   \fi}{\PackageError{\@classname}{Option review can be either true or
58     false}}
59 \ExecuteOptionsX{review=false}

\if@ACM@authorversion Whether we use author's version
60 \define@boolkey+{acmart.cls}[@ACM@]{authorversion}[true]{%
61   \if@ACM@authorversion
62     \PackageInfo{\@classname}{Using authorversion mode}%
63   \else
64     \PackageInfo{\@classname}{Not using authorversion mode}%
65   \fi}{\PackageError{\@classname}{Option authorversion can be either true or
66     false}}
67 \ExecuteOptionsX{authorversion=false}

\if@ACM@natbib Whether we use natbib mode
68 \define@boolkey+{acmart.cls}[@ACM@]{natbib}[true]{%
69   \if@ACM@natbib
70     \PackageInfo{\@classname}{Using natbib mode}%
71   \else
72     \PackageInfo{\@classname}{Not using natbib mode}%
73   \fi}{\PackageError{\@classname}{Option natbib can be either true or
74     false}}
75 \ExecuteOptionsX{natbib=false}

```

```

\if@ACM@anonymous Whether we use anonymous mode
76 \define@boolkey+{acmart.cls}[@ACM@]{anonymous}[true]{%
77   \if@ACM@anonymous
78     \PackageInfo{\@classname}{Using anonymous mode}%
79   \else
80     \PackageInfo{\@classname}{Not using anonymous mode}%
81   \fi}{\PackageError{\@classname}{Option anonymous can be either true or
82     false}}
83 \ExecuteOptionsX{anonymous=false}

```

```

\ACM@fontsize The font size to pass to the base class
84 \def\ACM@fontsize{
85   \DeclareOptionX{9pt}{\edef\ACM@fontsize{\CurrentOption}}
86   \DeclareOptionX{10pt}{\edef\ACM@fontsize{\CurrentOption}}
87   \DeclareOptionX{11pt}{\edef\ACM@fontsize{\CurrentOption}}
88   \DeclareOptionX{12pt}{\edef\ACM@fontsize{\CurrentOption}}

89   \DeclareOptionX{draft}{\PassOptionsToClass{\CurrentOption}{amsart}}
90   \DeclareOptionX{*}{\PassOptionsToClass{\CurrentOption}{amsart}}
91   \ProcessOptionsX
92   \ClassInfo{\@classname}{Using format \ACM@format, number \ACM@format@nr}

```

3.3 Setting switches

```

\if@ACM@manuscript Whether we use manuscript mode
93 \newif\if@ACM@manuscript

\if@ACM@journal There are two kinds of publications: journals and books
94 \newif\if@ACM@journal

\if@ACM@sigchiamode The formatting of SIGCHI abstracts is quite unusual. We have a special switch for them.
95 \newif\if@ACM@sigchiamode

Setting up switches
96 \ifnum\ACM@format@nr=0\relax
97   \@ACM@manuscripttrue
98 \else
99   \@ACM@manuscriptfalse
100 \fi
101 \@ACM@sigchiamodefalse
102 \ifcase\ACM@format@nr
103 \relax % manuscript
104   \@ACM@journaltrue
105 \or % acmsmall
106   \@ACM@journaltrue
107 \or % acmlarge
108   \@ACM@journaltrue
109 \or % acmtog

```

```

110 \ACM@journaltrue
111 \or % sigconf
112 \ACM@journalfalse
113 \or % siggraph
114 \ACM@journalfalse
115 \or % sigplan
116 \ACM@journalfalse
117 \or % sigchi
118 \ACM@journalfalse
119 \or % sigchi-a
120 \ACM@journalfalse
121 \ACM@sigchiamodetrue
122 \fi

```

3.4 Loading base class and package

At this point we either have \ACM@fontsize, or use defaults

```

123 \ifx\ACM@fontsize\@empty
124 \ifcase\ACM@format@nr
125 \relax % manuscript
126 \def\ACM@fontsize{9pt}%
127 \or % acmsmall
128 \def\ACM@fontsize{10pt}%
129 \or % acmlarge
130 \def\ACM@fontsize{9pt}%
131 \or % acmtog
132 \def\ACM@fontsize{9pt}%
133 \or % sigconf
134 \def\ACM@fontsize{9pt}%
135 \or % siggraph
136 \def\ACM@fontsize{9pt}%
137 \or % sigplan
138 \def\ACM@fontsize{9pt}%
139 \or % sigchi
140 \def\ACM@fontsize{10pt}%
141 \or % sigchi-a
142 \def\ACM@fontsize{10pt}%
143 \fi
144 \fi
145 \ClassInfo{\@classname}{Using fontsize \ACM@fontsize}
146 \LoadClass[\ACM@fontsize, reqno]{amsart}
147 \RequirePackage{microtype}

```

We need totpages package to calculate the number of pages

```

148 \RequirePackage{totpages}

```

The amsmath \collect@body is defined using \def. We load environ to access the \long version of the command

```

149 \RequirePackage{environ}

```

We use setspace for doublespacing

```
150 \if@ACM@manuscript
151 \RequirePackage{setspace}
152 \onehalfspacing
153 \fi
```

Citations. We patch \setcitestyle to allow, e.g., \setcitestyle{sort} and \setcitestyle{nosort}

```
154 \if@ACM@natbib
155 \RequirePackage{natbib}
156 \renewcommand{\bibfont}{\bibliofont}
157 \renewcommand\setcitestyle[1]{
158 \@for\@tempa:=#1\do
159 {\def\@tempb{round}\ifx\@tempa\@tempb
160 \renewcommand\NAT@open{(\renewcommand\NAT@close{)}\fi
161 \def\@tempb{square}\ifx\@tempa\@tempb
162 \renewcommand\NAT@open{[\renewcommand\NAT@close{]}\fi
163 \def\@tempb{angle}\ifx\@tempa\@tempb
164 \renewcommand\NAT@open{$< $\renewcommand\NAT@close{$> $\fi
165 \def\@tempb{curly}\ifx\@tempa\@tempb
166 \renewcommand\NAT@open{\{\renewcommand\NAT@close{\}}\fi
167 \def\@tempb{semicolon}\ifx\@tempa\@tempb
168 \renewcommand\NAT@sep{;}\fi
169 \def\@tempb{colon}\ifx\@tempa\@tempb
170 \renewcommand\NAT@sep{:}\fi
171 \def\@tempb{comma}\ifx\@tempa\@tempb
172 \renewcommand\NAT@sep{,}\fi
173 \def\@tempb{authoryear}\ifx\@tempa\@tempb
174 \NAT@numbersfalse\fi
175 \def\@tempb{numbers}\ifx\@tempa\@tempb
176 \NAT@numberstrue\NAT@superfalse\fi
177 \def\@tempb{super}\ifx\@tempa\@tempb
178 \NAT@numberstrue\NAT@supertrue\fi
179 \def\@tempb{nobibstyle}\ifx\@tempa\@tempb
180 \let\bibstyle=\@gobble\fi
181 \def\@tempb{bibstyle}\ifx\@tempa\@tempb
182 \let\bibstyle=\@citestyle\fi
183 \def\@tempb{sort}\ifx\@tempa\@tempb
184 \def\NAT@sort{\@ne}\fi
185 \def\@tempb{nosort}\ifx\@tempa\@tempb
186 \def\NAT@sort{\z@}\fi
187 \def\@tempb{compress}\ifx\@tempa\@tempb
188 \def\NAT@cmprs{\@ne}\fi
189 \def\@tempb{nocompress}\ifx\@tempa\@tempb
190 \def\NAT@cmprs{\@z}\fi
191 \def\@tempb{sort&compress}\ifx\@tempa\@tempb
192 \def\NAT@sort{\@ne}\def\NAT@cmprs{\@ne}\fi
193 \def\@tempb{mcite}\ifx\@tempa\@tempb
194 \let\NAT@merge\@ne\fi
195 \def\@tempb{merge}\ifx\@tempa\@tempb
```

```

196 \ifnum{\NAT@merge<\tw@}{\let\NAT@merge\tw@}\fi
197 \def\@tempb{elide}\ifx\@tempa\@tempb
198 \ifnum{\NAT@merge<\thr@}{\let\NAT@merge\thr@}\fi
199 \def\@tempb{longnamesfirst}\ifx\@tempa\@tempb
200 \NAT@longnamestrue\fi
201 \def\@tempb{nonamebreak}\ifx\@tempa\@tempb
202 \def\NAT@nmfmt#1{\mbox{\NAT@up#1}}\fi
203 \expandafter\NAT@find@eq\@tempa=\relax\@nil
204 \if\@tempc\relax\else
205 \expandafter\NAT@rem@eq\@tempc
206 \def\@tempb{open}\ifx\@tempa\@tempb
207 \xdef\NAT@open{\@tempc}\fi
208 \def\@tempb{close}\ifx\@tempa\@tempb
209 \xdef\NAT@close{\@tempc}\fi
210 \def\@tempb{aysep}\ifx\@tempa\@tempb
211 \xdef\NAT@aysep{\@tempc}\fi
212 \def\@tempb{yysep}\ifx\@tempa\@tempb
213 \xdef\NAT@yrsep{\@tempc}\fi
214 \def\@tempb{notesep}\ifx\@tempa\@tempb
215 \xdef\NAT@cmt{\@tempc}\fi
216 \def\@tempb{citesep}\ifx\@tempa\@tempb
217 \xdef\NAT@sep{\@tempc}\fi
218 \fi
219 }%
220 \NAT@@setcites
221 }
222 \setcitestyle{%
223 open={[]},close={[]},citesep={;},%
224 authoryear,aysep={},yysep={,},%
225 notesep={, }}
226 \fi

```

Before we call `hyperref`, we redefine `\startsection` commands to their \LaTeX defaults, since `amsart` ones are too AMS-specific. We need to do this early since we want `hyperref` to have a chance to redefine them again:

```

227 \def\@startsection#1#2#3#4#5#6{%
228 \if@noskipsec \leavevmode \fi
229 \par
230 \@tempskipa #4\relax
231 \@afterindenttrue
232 \ifdim \@tempskipa <\z@
233 \@tempskipa -\@tempskipa \@afterindentfalse
234 \fi
235 \if@nobreak
236 \everypar{}%
237 \else
238 \addpenalty\@secpenalty\addvspace\@tempskipa
239 \fi
240 \ifstar
241 {\@ssect{#3}{#4}{#5}{#6}}%

```

```

242     {\@dblarg{\@sect{#1}{#2}{#3}{#4}{#5}{#6}}}}
243 \def\@sect#1#2#3#4#5#6[#7]#8{%
244     \ifnum #2>\c@secnumdepth
245         \let\@svsec\@empty
246     \else
247         \refstepcounter{#1}%
248         \protected@edef\@svsec{\@seccntformat{#1}\relax}%
249     \fi
250     \@tempskipa #5\relax
251     \ifdim \@tempskipa>\z@
252         \begingroup
253             #6{%
254                 \@hangfrom{\hskip #3\relax\@svsec}%
255                 \interlinepenalty \@M #8\@par}%
256         \endgroup
257         \csname #1mark\endcsname{#7}%
258         \addcontentsline{toc}{#1}{%
259             \ifnum #2>\c@secnumdepth \else
260                 \protect\numberline{\csname the#1\endcsname}%
261             \fi
262             #7}%
263     \else
264         \def\@svsechd{%
265             #6{\hskip #3\relax
266                 \@svsec #8}%
267             \csname #1mark\endcsname{#7}%
268             \addcontentsline{toc}{#1}{%
269                 \ifnum #2>\c@secnumdepth \else
270                     \protect\numberline{\csname the#1\endcsname}%
271                 \fi
272                 #7}%}
273     \fi
274     \@xsect{#5}}
275 \def\@xsect#1{%
276     \@tempskipa #1\relax
277     \ifdim \@tempskipa>\z@
278         \par \nobreak
279         \vskip \@tempskipa
280         \@afterheading
281     \else
282         \@nobreakfalse
283         \global\@noskipsectrue
284         \everypar{%
285             \if@noskipsec
286                 \global\@noskipsecfalse
287                 {\setbox\z@\lastbox}%
288                 \clubpenalty\@M
289             \begingroup \@svsechd \endgroup
290             \unskip
291             \@tempskipa #1\relax

```



```

292         \hskip -\@tempskipa
293     \else
294         \clubpenalty \@clubpenalty
295         \everypar{}%
296     \fi}%
297 \fi
298 \ignorespaces}
299 \def\@secntformat#1{\csname the#1\endcsname\quad}
300 \def\@ssect#1#2#3#4#5{%
301     \@tempskipa #3\relax
302     \ifdim \@tempskipa>\z@
303         \begingroup
304             #4{%
305                 \@hangfrom{\hskip #1}%
306                 \interlinepenalty \@M #5\@@par}%
307         \endgroup
308     \else
309         \def\@svsechd{#4{\hskip #1\relax #5}}%
310     \fi
311     \@xsect{#3}}

```

And hyperref

```

312 \let\@footnotemark@nolink\@footnotemark
313 \let\@footnotetext@nolink\@footnotetext
314 \RequirePackage{hyperref}
315 \urlstyle{rm}
316 \ifcase\ACM@format@nr
317 \relax % manuscript
318 \or % acmsmall
319 \or % acmlarge
320 \or % acmtog
321 \or % sigconf
322 \or % siggraph
323 \or % sigplan
324     \urlstyle{sf}
325 \or % sigchi
326 \or % sigchi-a
327     \urlstyle{sf}
328 \fi
329 \if@ACM@screen
330     \hypersetup{colorlinks,
331         linkcolor=ACMRed,
332         citecolor=ACMPurple,
333         urlcolor=ACMDarkBlue,
334         filecolor=ACMDarkBlue}
335 \else
336     \hypersetup{hidelinks}
337 \fi

```

Bibliography mangling. Siggraph does not want the label.

```

338 \if@ACM@natbib

```

```

339 \let\citeN\cite
340 \let\cite\citep
341 \let\citeANP\citeauthor
342 \let\citeNN\citeyearpar
343 \let\citeyearNP\citeyear
344 \let\citeyear\citeyearpar
345 \let\citeNP\citealt
346 \def\shortcite#1{\citeyear{#1}}
347 \DeclareRobustCommand\citeA
348     {\begingroup\NAT@swafalse
349      \let\NAT@ctype\@ne\NAT@partrue\NAT@fullfalse\NAT@open\NAT@citetp}
350 \providecommand\newblock{}
351 \else
352 \providecommand\citename[1]{#1}
353 \fi
354 \ifcase\ACM@format@nr
355 \relax % manuscript
356 \or % acmsmall
357 \or % acmlarge
358 \or % acmtog
359 \or % sigconf
360 \or % siggraph
361 \def\@biblabel#1{}
362 \ifx\bibhang\undefined
363 \newlength\bibhang
364 \fi
365 \setlength{\bibhang}{1em}
366 \renewenvironment{thebibliography}[1]{%
367     \@bibtitlestyle
368     \normalfont\bibliofont\labelsep .5em\relax
369     \renewcommand\theenumiv{\arabic{enumiv}}\let\p@enumiv\@empty
370     \list{\@biblabel{\theenumiv}}{\labelwidth\z@
371         \setlength{\itemindent}{-\bibhang}%
372         \setlength{\leftmargin}{\bibhang}%
373         \labelsep\z@
374         \def\newblock{\hspace .11em plus .33em minus .07em}%
375         \usecounter{enumiv}}%
376     \sloppy \clubpenalty\@M \widowpenalty\clubpenalty
377     \sfcode'\.=\@m
378 }{%
379 \def\@noitemerr{\@latex@warning{Empty 'thebibliography' environment}}%
380 \endlist
381 }
382 \or % sigplan
383 \or % sigchi
384 \or % sigchi-a
385 \fi

Graphics and color
386 \RequirePackage{graphicx, xcolor}

```

We define ACM colors according to [8]:

```

387 \definecolor[named]{ACMBlue}{cmyk}{1,0.1,0,0.1}
388 \definecolor[named]{ACMYellow}{cmyk}{0,0.16,1,0}
389 \definecolor[named]{ACMOrange}{cmyk}{0,0.42,1,0.01}
390 \definecolor[named]{ACMRed}{cmyk}{0,0.90,0.86,0}
391 \definecolor[named]{ACMLightBlue}{cmyk}{0.49,0.01,0,0}
392 \definecolor[named]{ACMGreen}{cmyk}{0.20,0,1,0.19}
393 \definecolor[named]{ACMPurple}{cmyk}{0.55,1,0,0.15}
394 \definecolor[named]{ACMDarkBlue}{cmyk}{1,0.58,0,0.21}

```

3.5 Paper size and paragraphing

We use geometry for dimensions

```

395 \RequirePackage{geometry}
396 \ifcase\ACM@format@nr
397 \relax % manuscript
398   \geometry{letterpaper,head=1pc}%
399 \or % acmsmall
400   \geometry{twoside=true,
401     includeheadfoot, head=1pc, foot=2pc,
402     paperwidth=6.75in, paperheight=10in,
403     top=58pt, bottom=44pt, inner=46pt, outer=46pt
404   }%
405 \or % acmlarge
406   \geometry{twoside=true, head=1pc, foot=2pc,
407     paperwidth=8.5in, paperheight=11in,
408     includeheadfoot,
409     top=78pt, bottom=114pt, inner=81pt, outer=81pt
410   }%
411 \or % acmtog
412   \geometry{twoside=true, head=1pc, foot=2pc,
413     paperwidth=8.5in, paperheight=11in,
414     includeheadfoot, columnsep=24pt,
415     top=52pt, bottom=75pt, inner=52pt, outer=52pt
416   }%
417 \or % sigconf
418   \geometry{twoside=true, head=1pc,
419     paperwidth=8.5in, paperheight=11in,
420     includeheadfoot, columnsep=2pc,
421     top=57pt, bottom=75pt, inner=54pt, outer=57pt
422   }%
423 \or % siggraph
424   \geometry{twoside=true, head=1pc,
425     paperwidth=8.5in, paperheight=11in,
426     includeheadfoot, columnsep=2pc,
427     top=57pt, bottom=75pt, inner=54pt, outer=57pt
428   }%
429 \or % sigplan
430   \geometry{twoside=true, head=1pc,

```

```

431     paperwidth=8.5in, paperheight=11in,
432     includeheadfoot=false, columnsep=2pc,
433     top=1in, bottom=1in, inner=0.75in, outer=0.75in
434 }%
435 \or % sigchi
436   \geometry{twoside=true, head=1pc,
437     paperwidth=8.5in, paperheight=11in,
438     includeheadfoot, columnsep=2pc,
439     top=66pt, bottom=78pt, inner=54pt, outer=48pt
440 }%
441 \or % sigchi-a
442   \geometry{twoside=false, head=1pc,
443     paperwidth=11in, paperheight=8.5in,
444     includeheadfoot, marginparsep=72pt,
445     marginparwidth=170pt, columnsep=20pt,
446     top=72pt, bottom=72pt, left=314pt, right=72pt
447 }%
448   \@mparswitchfalse
449   \reversemarginpar
450 \fi

```

\parindent Paragraphing

```

\parskip
451 \setlength\parindent{10\p@}
452 \setlength\parskip{\z@}
453 \ifcase\ACM@format@nr
454 \relax % manuscript
455 \or % acmsmall
456 \or % acmlarge
457 \or % acmtog
458   \setlength\parindent{9\p@}%
459 \or % sigconf
460 \or % siggraph
461 \or % sigplan
462 \or % sigchi
463 \or % sigchi-a
464 \fi

```

Footnotes require some consideration. We have several layers of footnotes: front-matter footnotes, “regular” footnotes and the special insert for bibstrip. In the old ACM classes bibstrip was a \@float. The problem with floats is that they tend to, well, float—and we want the guarantee they stay.

```

465 \RequirePackage{manyfoot}
466 \DeclareNewFootnote{copyrightpermission}
467 \skip\footinscopyrightpermission=0.1\baselineskip plus 0.1\baselineskip

```

\footnoterule Tschichold’s rules:

```

468 \def\footnoterule{\kern-3\p@
469   \hrule \@width \columnwidth \kern 2.6\p@}

```

```

\endminipage We do not use footnote rules in minipages
470 \def\endminipage{%
471   \par
472   \unskip
473   \ifvoid\@mpfootins\else
474     \vskip\skip\@mpfootins
475     \normalcolor
476     \unvbox\@mpfootins
477   \fi
478   \@minipagefalse %% added 24 May 89
479   \color@endgroup
480   \egroup
481   \expandafter\@iiiparbox\@mpargs{\unvbox\@tempboxa}}
482

\@makefnmark We do not use indentation for footnotes
483 \def\@makefnmark{\noindent\@makefnmark}

\@footnotetext In sigchi-a mode our footnotes are on the margins!
484 \if@ACM@sigchiamode
485 \long\def\@footnotetext#1{\marginpar{%
486   \reset@font\small
487   \interlinepenalty\interfootnotelinepenalty
488   \protected@edef\@currentlabel{%
489     \csname p@footnote\endcsname\@thefnmark
490   }}%
491   \color@begingroup
492     \@makefnmark{%
493       \rule{z@footnotesep}{\ignorespaces#1}\@finalstrut\strutbox}%
494   \color@endgroup}}%
495 \fi

```

3.6 Fonts

We use Times throughout

```

496 \usepackage[tt=false]{libertine}
497 \usepackage[varqu]{zi4}
498 \usepackage[libertine]{newtxmath}

```

The SIGCHI extended abstracts are sans serif:

```

499 \if@ACM@sigchiamode
500   \renewcommand{\familydefault}{\sfdefault}
501 \fi

```

3.7 Floats

We use caption package

```

502 \RequirePackage{caption, float}
503 \captionsetup[table]{position=top}

```

```

\if@ACM@captionrule Whether to use caption rules in SIGPLAN. We define it here, so caption rule commands
do not produce errors with other formats. Fortunately, other formats do not use rules.
504 \newif\if@ACM@captionrule
505 \@ACM@captionruletrue

\nocaptionrule Locally delete caption rule
506 \def\nocaptionrule{\@ACM@captionrulefalse}

\captionruleoff Globally switching rules off
507 \def\captionruleoff{\global\@ACM@captionrulefalse}

\captionruleon Globally switching rules on
508 \def\captionruleon{\global\@ACM@captionruletrue}

@ACM@capfmtWithRuleAbove The SIGPLAN ruled caption for figures
509 \DeclareCaptionFormat{@ACM@capfmtWithRuleAbove}{%
510   \if@ACM@captionrule\hrulefill\par\noindent\fi#1#2#3\par}

@ACM@capfmtWithRuleBelow The SIGPLAN ruled caption for tables
511 \DeclareCaptionFormat{@ACM@capfmtWithRuleBelow}{%
512   #1#2#3\if@ACM@captionrule\par\vspace{-.5\baselineskip}%
513   \noindent\hrulefill\fi\par}

And the actual setup
514 \if@ACM@journal
515   \captionsetup{labelfont={sf}, small},
516   textfont={sf}, margin=\z@
517   \captionsetup[figure]{name={Fig.}}
518 \else
519   \captionsetup{labelfont={bf},
520     textfont={bf}, labelsep=colon, margin=\z@}
521   \ifcase\ACM@format@nr
522     \relax % manuscript
523     \or % acmsmall
524     \or % acmlarge
525     \or % acmtog
526     \or % sigconf
527     \or % siggraph
528     \captionsetup{textfont={it}}
529     \or % sigplan
530     \setlength\abovecaptionskip{4\p@}
531     \captionsetup[figure]{format=@ACM@capfmtWithRuleAbove}
532     \captionsetup[table]{format=@ACM@capfmtWithRuleBelow}
533     \captionsetup{labelfont={bf},
534       textfont={normalfont}, labelsep=period, margin=\z@}
535     \or % sigchi
536     \captionsetup[figure]{labelfont={bf}, small},
537     textfont={bf}, small}}
538   \or % sigchi-a

```

```

539     \captionsetup[figure]{labelfont={bf, small},
540         textfont={bf, small}}
541     \fi
542 \fi

sidebar The sidebar environment:
543 \newfloat{sidebar}{}{sbar}
544 \floatname{sidebar}{Sidebar}
545 \renewenvironment{sidebar}{\Collect@Body\@sidebar}{}

\@sidebar The processing of the saved text
546 \long\def\@sidebar#1{\bgroup\captionsetup{type=sidebar}%
547     \marginpar{\small#1}\egroup}

marginfigure The marginfigure environment:
548 \newenvironment{marginfigure}{\Collect@Body\@marginfigure}{}

\@marginfigure The processing of the saved text
549 \long\def\@marginfigure#1{\bgroup\captionsetup{type=figure}%
550     \marginpar{\small#1}\egroup}

margintable The margintable environment:
551 \newenvironment{margintable}{\Collect@Body\@margintable}{}

\@margintable The processing of the saved text
552 \long\def\@margintable#1{\bgroup\captionsetup{type=table}%
553     \marginpar{\small#1}\egroup}

SIGCHI extended abstract provides an interesting possibility to push into the margin.
Here we use figure* and table* for this.

\fulltextwidth We define the width of the boxes as
554 \newdimen\fulltextwidth
555 \fulltextwidth=\dimexpr(\textwidth+\marginparwidth+\marginparsep)

\@dblfloat We redefine the double float command. First, we make the size bigger. Second, our
default position is going to be tp (to give marginalia a chance)
556 \if@ACM@sigchiamode
557 \def\@dblfloat{\bgroup\columnwidth=\fulltextwidth
558     \let\@endfloatbox\@endwidefloatbox
559     \def\@fpsadddefault{\def\@fps{tp}}}%
560 \@float}
561 \fi

\end@dblfloat And the end. Just adding a \bgroup.
562 \if@ACM@sigchiamode
563 \def\end@dblfloat{%
564     \end@float\egroup}
565 \fi

```

\@endwidefloatbox This is the end of a wide box - we basically move everything to the left

```

566 \def\@endwidefloatbox{%
567   \par\vskip\z@skip
568   \@minipagefalse
569   \outer@nobreak
570   \egroup
571   \color@endbox
572   \global\setbox\@currbox=\vbox{\moveleft
573     \dimexpr(\fulltextwidth-\textwidth)\box\@currbox}%
574   \wd\@currbox=\textwidth
575 }
```

3.8 Lists

```

576 \ifcase\ACM@format@nr
577 \relax % manuscript
578 \or % acmsmall
579 \or % acmlarge
580 \or % acmtog
581 \or % sigconf
582 \or % siggraph
583 \or % sigplan
584 \def\labelenumi{\theenumi.}
585 \def\labelenumii{\theenumii.}
586 \def\labelenumiii{\theenumiii.}
587 \def\labelenumiv{\theenumiv.}
588 \or % sigchi
589 \or % sigchi-a
590 \fi
```

3.9 Top matter data

We use keyval interface to define journal title and relevant information

```

591 \define@choicekey*+{ACM}{acmJournal}[\@journalCode\@journalCode@nr]{%
592   CIE,%
593   CSUR,%
594   JACM,%
595   JDIQ,%
596   JEA,%
597   JERIC,%
598   JETC,%
599   JOCCH,%
600   TAAS,%
601   TACCESS,%
602   TACO,%
603   TALG,%
604   TALLIP,%
605   TAP,%
606   TCPS,%
607   TEAC,%
```



```

608 TECS,%
609 TIIS,%
610 TISSEC,%
611 TIST,%
612 TKDD,%
613 TMIS,%
614 TOCE,%
615 TOCHI,%
616 TOCL,%
617 TOCS,%
618 TOCT,%
619 TODAES,%
620 TODS,%
621 TOG,%
622 TOIS,%
623 TOIT,%
624 TOMACS,%
625 TOMM,%
626 TOMPECS,%
627 TOMS,%
628 TOPC,%
629 TOPS,%
630 TOPLAS,%
631 TOS,%
632 TOSEM,%
633 TOSN,%
634 TRETs,%
635 TSAS,%
636 TSC,%
637 TSLP,%
638 TWEB%
639 }{%
640 \ifcase\@journalCode@nr
641 \relax % CIE
642 \def\@journalName{ACM Computers in Entertainment}%
643 \def\@journalNameShort{ACM Comput. Entertain.}%
644 \def\@permissionCodeOne{1544-3574}%
645 \or % CSUR
646 \def\@journalName{ACM Computing Surveys}%
647 \def\@journalNameShort{ACM Comput. Surv.}%
648 \def\@permissionCodeOne{0360-0300}%
649 \or % JACM
650 \def\@journalName{Journal of the ACM}%
651 \def\@journalNameShort{J. ACM}%
652 \def\@permissionCodeOne{0004-5411}%
653 \or % JDIQ
654 \def\@journalName{ACM Journal of Data and Information Quality}%
655 \def\@journalNameShort{ACM J. Data Inform. Quality}%
656 \def\@permissionCodeOne{1936-1955}%
657 \or % JEA

```

```

658 \def\@journalName{ACM Journal of Experimental Algorithmics}%
659 \def\@journalNameShort{ACM J. Exp. Algor.}%
660 \def\@permissionCodeOne{1084-6654}%
661 \or % JERIC
662 \def\@journalName{ACM Journal of Educational Resources in Computing}%
663 \def\@journalNameShort{ACM J. Edu. Resources in Comput.}%
664 \def\@permissionCodeOne{1073-0516}%
665 \or % JETC
666 \def\@journalName{ACM Journal on Emerging Technologies in Computing Systems}%
667 \def\@journalNameShort{ACM J. Emerg. Technol. Comput. Syst.}%
668 \def\@permissionCodeOne{1550-4832}%
669 \or % JOCCH
670 \def\@journalName{ACM Journal on Computing and Cultural Heritage}%
671 \def\@journalNameShort{ACM J. Comput. Cult. Herit.}%
672 \or % TAAS
673 \def\@journalName{ACM Transactions on Autonomous and Adaptive Systems}%
674 \def\@journalNameShort{ACM Trans. Autonom. Adapt. Syst.}%
675 \def\@permissionCodeOne{1556-4665}%
676 \or % TACCESS
677 \def\@journalName{ACM Transactions on Accessible Computing}%
678 \def\@journalNameShort{ACM Trans. Access. Comput.}%
679 \def\@permissionCodeOne{1936-7228}%
680 \or % TACO
681 \def\@journalName{ACM Transactions on Architecture and Code Optimization}%
682 \or % TALG
683 \def\@journalName{ACM Transactions on Algorithms}%
684 \def\@journalNameShort{ACM Trans. Algor.}%
685 \def\@permissionCodeOne{1549-6325}%
686 \or % TALLIP
687 \def\@journalName{ACM Transactions on Asian and Low-Resource Language Information Processing}%
688 \def\@journalNameShort{ACM Trans. Asian Low-Resour. Lang. Inf. Process.}%
689 \def\@permissionCodeOne{2375-4699}%
690 \or % TAP
691 \def\@journalName{ACM Transactions on Applied Perception}%
692 \or % TCPS
693 \def\@journalName{ACM Transactions on Cyber-Physical Systems}%
694 \or % TEAC
695 \def\@journalName{ACM Transactions on Economics and Computation}%
696 \or % TECS
697 \def\@journalName{ACM Transactions on Embedded Computing Systems}%
698 \def\@journalNameShort{ACM Trans. Embedd. Comput. Syst.}%
699 \def\@permissionCodeOne{1539-9087}%
700 \or % TIIS
701 \def\@journalName{ACM Transactions on Interactive Intelligent Systems}%
702 \def\@journalNameShort{ACM Trans. Interact. Intell. Syst.}%
703 \def\@permissionCodeOne{2160-6455}%
704 \or % TISSEC
705 \def\@journalName{ACM Transactions on Information and System Security}%
706 \def\@journalNameShort{ACM Trans. Info. Syst. Sec.}%
707 \def\@permissionCodeOne{1094-9224}%

```

```

708 \or % TIST
709 \def\@journalName{ACM Transactions on Intelligent Systems and Technology}%
710 \def\@journalNameShort{ACM Trans. Intell. Syst. Technol.}%
711 \def\@permissionCodeOne{2157-6904}%
712 \or % TKDD
713 \def\@journalName{ACM Transactions on Knowledge Discovery from Data}%
714 \def\@journalNameShort{ACM Trans. Knowl. Discov. Data.}%
715 \def\@permissionCodeOne{1556-4681}%
716 \or % TMIS
717 \def\@journalName{ACM Transactions on Management Information Systems}%
718 \def\@journalNameShort{ACM Trans. Manag. Inform. Syst.}%
719 \def\@permissionCodeOne{2158-656X}%
720 \or % TOCE
721 \def\@journalName{ACM Transactions on Computing Education}%
722 \def\@journalNameShort{ACM Trans. Comput. Educ.}%
723 \def\@permissionCodeOne{1946-6226}%
724 \or % TOCHI
725 \def\@journalName{ACM Transactions on Computer-Human Interaction}%
726 \def\@journalNameShort{ACM Trans. Comput.-Hum. Interact.}%
727 \def\@permissionCodeOne{1073-0516}%
728 \or % TOCL
729 \def\@journalName{ACM Transactions on Computational Logic}%
730 \def\@journalNameShort{ACM Trans. Comput. Logic}%
731 \def\@permissionCodeOne{1529-3785}%
732 \or % TOCS
733 \def\@journalName{ACM Transactions on Computer Systems}%
734 \def\@journalNameShort{ACM Trans. Comput. Syst.}%
735 \def\@permissionCodeOne{0734-2071}%
736 \or % TOCT
737 \def\@journalName{ACM Transactions on Computation Theory}%
738 \def\@journalNameShort{ACM Trans. Comput. Theory}%
739 \def\@permissionCodeOne{1942-3454}%
740 \or % TODAES
741 \def\@journalName{ACM Transactions on Design Automation of Electronic Systems}%
742 \def\@journalNameShort{ACM Trans. Des. Autom. Electron. Syst.}%
743 \def\@permissionCodeOne{1084-4309}%
744 \or % TODS
745 \def\@journalName{ACM Transactions on Database Systems}%
746 \def\@journalNameShort{ACM Trans. Datab. Syst.}%
747 \def\@permissionCodeOne{0362-5915}%
748 \or % TOG
749 \def\@journalName{ACM Transactions on Graphics}%
750 \def\@journalNameShort{ACM Trans. Graph.}%
751 \def\@permissionCodeOne{0730-0301}%
752 \or % TOIS
753 \def\@journalName{ACM Transactions on Information Systems}%
754 \def\@journalName{ACM Transactions on Information Systems}%
755 \def\@permissionCodeOne{1046-8188}%
756 \or % TOIT
757 \def\@journalName{ACM Transactions on Internet Technology}%

```

```

758 \def\@journalNameShort{ACM Trans. Internet Technol.}%
759 \def\@permissionCodeOne{1533-5399}%
760 \or % TOMACS
761 \def\@journalName{ACM Transactions on Modeling and Computer Simulation}%
762 \def\@journalName{ACM Transactions on Modeling and Computer Simulation}%
763 \def\@journalNameShort{ACM Trans. Model. Comput. Simul.}%
764 \or % TOMM
765 \def\@journalName{ACM Transactions on Multimedia Computing, Communications and Applications}%
766 \def\@journalNameShort{ACM Trans. Multimedia Comput. Commun. Appl.}%
767 \def\@permissionCodeOne{1551-6857}%
768 \def\@permissionCodeTwo{0100}%
769 \or % TOMPECS
770 \def\@journalName{ACM Transactions on Modeling and Performance Evaluation of Computing Systems}%
771 \def\@journalNameShort{ACM Trans. Model. Perform. Eval. Comput. Syst.}%
772 \def\@permissionCodeOne{2376-3639}%
773 \or % TOMS
774 \def\@journalName{ACM Transactions on Mathematical Software}%
775 \def\@journalNameShort{ACM Trans. Math. Softw.}%
776 \def\@permissionCodeOne{0098-3500}%
777 \or % TOPC
778 \def\@journalName{ACM Transactions on Parallel Computing}%
779 \def\@journalNameShort{ACM Trans. Parallel Comput.}%
780 \def\@permissionCodeOne{1539-9087}%
781 \or % TOPS
782 \def\@journalName{ACM Transactions on Privacy and Security}%
783 \def\@journalNameShort{ACM Trans. Priv. Sec.}%
784 \def\@permissionCodeOne{2471-2566}%
785 \or % TOPLAS
786 \def\@journalName{ACM Transactions on Programming Languages and Systems}%
787 \def\@journalNameShort{ACM Trans. Program. Lang. Syst.}%
788 \def\@permissionCodeOne{0164-0925}%
789 \or % TOS
790 \def\@journalName{ACM Transactions on Storage}%
791 \def\@journalNameShort{ACM Trans. Storage}%
792 \def\@permissionCodeOne{1553-3077}%
793 \or % TOSEM
794 \def\@journalName{ACM Transactions on Software Engineering and Methodology}%
795 \def\@journalNameShort{ACM Trans. Softw. Eng. Methodol.}%
796 \def\@permissionCodeOne{1049-331X}%
797 \or % TOSN
798 \def\@journalName{ACM Transactions on Sensor Networks}%
799 \def\@journalNameShort{ACM Trans. Sensor Netw.}%
800 \def\@permissionCodeOne{1550-4859}%
801 \or % TRET
802 \def\@journalName{ACM Transactions on Reconfigurable Technology and Systems}%
803 \def\@journalNameShort{ACM Trans. Reconfig. Technol. Syst.}%
804 \def\@permissionCodeOne{1936-7406}%
805 \or % TSAS
806 \def\@journalName{ACM Transactions on Spatial Algorithms and Systems}%
807 \def\@journalNameShort{ACM Trans. Spatial Algorithms Syst.}%

```

```

808 \def\@permissionCodeOne{2374-0353}%
809 \or % TSC
810 \def\@journalName{ACM Transactions on Social Computing}%
811 \def\@journalNameShort{ACM Trans. Soc. Comput.}%
812 \def\@permissionCodeOne{2469-7818}%
813 \or % TSLP
814 \def\@journalName{ACM Transactions on Speech and Language Processing}%
815 \def\@journalNameShort{ACM Trans. Speech Lang. Process.}%
816 \def\@permissionCodeOne{1550-4875}%
817 \or % TWEB
818 \def\@journalName{ACM Transactions on the Web}%
819 \def\@journalNameShort{ACM Trans. Web}%
820 \def\@permissionCodeOne{1559-1131}%
821 \fi
822 \ClassInfo{\@classname}{Using journal code \@journalCode}%
823 }{%
824 \ClassError{\@classname}{Incorrect journal #1}%
825 }%

\acmJournal And the syntactic sugar around it
826 \def\acmJournal#1{\setkeys{ACM}{acmJournal=#1}}

The defaults:
827 \def\@journalName{}%
828 \def\@journalNameShort{\@journalName}%
829 \def\@permissionCodeOne{XXXX-XX}%
830 \def\@permissionCodeTwo{}%

\acmConference This is the conference command
831 \newcommand\acmConference[4][{}]{%
832 \gdef\acmConference@shortname{#1}%
833 \gdef\acmConference@name{#2}%
834 \gdef\acmConference@date{#3}%
835 \gdef\acmConference@venue{#4}%
836 \ifx\acmConference@shortname\empty
837 \gdef\acmConference@shortname{#2}%
838 \fi}
839 \acmConference[Conference'17]{ACM Conference}{July 2017}{Washington,
840 DC, USA}

\subtitle The subtitle macro
841 \def\subtitle#1{\def\@subtitle{#1}}
842 \subtitle{}

\num@authors The total number of authors
843 \newcount\num@authors
844 \num@authors=0\relax

```

`\author` Adding an author to the list of authors and addresses

```
845 \renewcommand\author[2][{%
846   \global\advance\num@authors by 1\relax
847   \ifx\addresses\@empty
848     \if@ACM@anonymous
849       \gdef\addresses{\@author{Anonymous Author(s)}}%
850       \gdef\authors{Anonymous Author(s)}%
851     \else
852       \gdef\addresses{\@author{#2}}%
853       \gdef\authors{#2}%
854     \fi
855   \else
856     \if@ACM@anonymous\else
857       \g@addto@macro\addresses{\and\@author{#2}}%
858       \g@addto@macro\authors{\and#2}%
859     \fi
860   \fi
861   \if@ACM@anonymous
862     \ifx\shortauthors\@empty
863       \gdef\shortauthors{Anon.}%
864     \fi
865   \else
866     \def\@tempa{#1}%
867     \ifx\@tempa\@empty
868       \ifx\shortauthors\@empty
869         \gdef\shortauthors{#2}%
870       \else
871         \g@addto@macro\shortauthors{\and#2}%
872       \fi
873     \else
874       \ifx\shortauthors\@empty
875         \gdef\shortauthors{#1}%
876       \else
877         \g@addto@macro\shortauthors{\and#1}%
878       \fi
879     \fi
880   \fi}
```

`\affiliation` The macro `\affiliation` mimics `\address` from `amsart`. Note that it has an optional argument we do not currently need, but keep for the possible future use.

```
881 \newcommand{\affiliation}[2][{%
882   \if@ACM@anonymous\else
883     \g@addto@macro\addresses{\affiliation{#1}{#2}}%
884   \fi}
```

`\email` The macro `\email` mimics `\email` from `amsart`. Again it has an optional argument we do not currently need, but keep for the possible future use.

```
885 \renewcommand{\email}[2][{%
886   \if@ACM@anonymous\else
```

```

887 \g@addto@macro\addresses{\email{#1}{#2}}%
888 \fi}

\@titlenotes The titlenotes
889 \def\@titlenotes{}

\titlenote Adding note to the title
890 \def\titlenote#1{%
891 \g@addto@macro\@title{\footnotemark}%
892 \if@ACM@anonymous
893 \g@addto@macro\@titlenotes{%
894 \stepcounter{footnote}\footnotetext{Title note}}%
895 \else
896 \g@addto@macro\@titlenotes{\stepcounter{footnote}\footnotetext{#1}}%
897 \fi}

\@subtitlenotes The subtitlenotes
898 \def\@subtitlenotes{}

\subtitlenote Adding note to the subtitle
899 \def\subtitlenote#1{%
900 \g@addto@macro\@subtitle{\footnotemark}%
901 \if@ACM@anonymous
902 \g@addto@macro\@subtitlenotes{%
903 \stepcounter{footnote}\footnotetext{Subtitle note}}%
904 \else
905 \g@addto@macro\@subtitlenotes{%
906 \stepcounter{footnote}\footnotetext{#1}}%
907 \fi}

\@authornotes The authornotes
908 \def\@authornotes{}

\authornote Adding note to the author
909 \def\authornote#1{%
910 \if@ACM@anonymous\else
911 \g@addto@macro\addresses{\@authornotemark}
912 \g@addto@macro\@authornotes{%
913 \stepcounter{footnote}\footnotetext{#1}}%
914 \fi}

\acmVolume The current volume
915 \def\acmVolume#1{\def\@acmVolume{#1}}
916 \acmVolume{VV}

\acmNumber The current number
917 \def\acmNumber#1{\def\@acmNumber{#1}}
918 \acmNumber{NNN}

```

| | |
|--------------------------------|---|
| <code>\acmArticle</code> | The current article 919 <code>\def\acmArticle#1{\def\@acmArticle{#1}}</code> 920 <code>\acmArticle{AA}</code> |
| <code>\acmArticleSeq</code> | The sequence number 921 <code>\def\acmArticleSeq#1{\def\@acmArticleSeq{#1}}</code> 922 <code>\acmArticleSeq{\@acmArticle}</code> |
| <code>\acmYear</code> | The current year 923 <code>\def\acmYear#1{\def\@acmYear{#1}}</code> 924 <code>\acmYear{YYYY}</code> |
| <code>\acmMonth</code> | The current month 925 <code>\def\acmMonth#1{\def\@acmMonth{#1}}</code> 926 <code>\acmMonth{MM}</code> |
| <code>\@acmPubDate</code> | The publication date 927 <code>\def\@acmPubDate{\ifcase\@acmMonth\or</code> 928 <code>January\or February\or March\or April\or May\or June\or</code> 929 <code>July\or August\or September\or October\or November\or</code> 930 <code>December\fi~\@acmYear}</code> |
| <code>\acmPrice</code> | The price 931 <code>\def\acmPrice#1{\def\@acmPrice{#1}}</code> 932 <code>\acmPrice{15.00}</code> |
| <code>\acmISBN</code> | The book isbn 933 <code>\def\acmISBN#1{\def\@acmISBN{#1}}</code> 934 <code>\acmISBN{978-x-xxxx-xxxx-x/YY/MM}</code> |
| <code>\acmDOI</code> | The paper doi 935 <code>\def\acmDOI#1{\def\@acmDOI{#1}}</code> 936 <code>\acmDOI{10.1145/nnnnnnn.nnnnnnn}</code> |
| <code>\if@ACM@badge</code> | Whether to print badge. Note that either left or right badge triggers it: 937 <code>\newif\if@ACM@badge</code> 938 <code>\@ACM@badgefalse</code> |
| <code>\@ACM@badge@width</code> | The width of the badge 939 <code>\newlength\@ACM@badge@width</code> 940 <code>\setlength\@ACM@badge@width{5pc}</code> |
| <code>\@ACM@title@width</code> | The width of the badge 941 <code>\newlength\@ACM@title@width</code> |
| <code>\@ACM@badge@skip</code> | The space between the badge and the title 942 <code>\newlength\@ACM@badge@skip</code> 943 <code>\setlength\@ACM@badge@skip{1pc}</code> |

`\acmBadgeR` Setting the right badge

```

944 \newcommand\acmBadgeR[2][\@ACM@badgetrue
945   \def\@acmBadgeR@url{#1}%
946   \def\@acmBadgeR@image{#2}}
947 \def\@acmBadgeR@url{}
948 \def\@acmBadgeR@image{}

```

`\acmBadgeL` Setting the left badge

```

949 \newcommand\acmBadgeL[2][\@ACM@badgetrue
950   \def\@acmBadgeL@url{#1}%
951   \def\@acmBadgeL@image{#2}}
952 \def\@acmBadgeL@url{}
953 \def\@acmBadgeL@image{}

```

`\startPage` The start page of the paper

```

954 \def\startPage#1{\def\@startPage{#1}}
955 \startPage{}

```

`\terms` Terms are mostly obsolete, we use CCS now. Still it makes sense to keep them for compatibility.

```

956 \def\terms#1{\def\@terms{#1}}
957 \terms{}

```

`\keywords` Keywords are mostly obsolete, we use CCS now. Still it makes sense to keep them for compatibility.

```

958 \def\keywords#1{\def\@keywords{#1}}
959 \keywords{}

```

`abstract` Amsart puts abstract in the box. Since we do not know whether we will use two column mode, we prefer to save the text

```

960 \renewenvironment{abstract}{\Collect@Body\@saveabstract}{}

```

`\@saveabstract` And saving the abstract

```

961 \long\def\@saveabstract#1{\long\gdef\@abstract{#1}}
962 \@saveabstract{}

```

`\@empty` The long version of `\@empty` (to compare with `\@abstract`)

```

963 \long\def\@empty{}

```

`\if@ACM@printcss` Whether to print CCS

```

964 \define@boolkey+{@ACM@topmatter@}{@ACM@}{printcss}[true]{%
965   \if@ACM@printcss
966     \ClassInfo{\@classname}{Printing CSS}%
967   \else
968     \ClassInfo{\@classname}{Suppressing CSS}%
969   \fi}{\ClassError{\@classname}{printcss must be true or false}}

```

```

\if@ACM@printbib Whether to print ACM bib
970 \define@boolkey+{@ACM@topmatter@}[@ACM@]{printbib}[true]{%
971   \if@ACM@printcss
972     \ClassInfo{\@classname}{Printing bibformat}%
973   \else
974     \ClassInfo{\@classname}{Suppressing bibformat}%
975   \fi}{\ClassError{\@classname}{printbib must be true or false}}

\settopmatter The usual syntactic sugar
976 \def\settopmatter#1{\setkeys{@ACM@topmatter@}{#1}}

Now the settings
977 \settopmatter{printcss=true}
978 \if@ACM@manuscript
979   \settopmatter{printbib=false}
980 \else
981   \if@ACM@journal
982     \settopmatter{printbib=true}
983   \else
984     \settopmatter{printbib=false}
985   \fi
986 \fi

\@received The container for the paper history
987 \def\@received{}

\received The \received command
988 \newcommand\received[2][{}]{\def\@tempa{#1}%
989   \ifx\@tempa\@empty
990     \ifx\@received\@empty
991       \gdef\@received{Received #2}%
992     \else
993       \g@addto@macro{\@received}{; revised #2}%
994     \fi
995   \else
996     \ifx\@received\@empty
997       \gdef\@received{#1 #2}%
998     \else
999       \g@addto@macro{\@received}{; #1 #2}%
1000     \fi
1001   \fi}
1002 \AtEndDocument{%
1003   \ifx\@received\@empty\else
1004     \par\bigskip\noindent\small\normalfont\@received\par
1005   \fi}

```

3.10 Concepts system

We exclude CCSXML stuff generated by the ACM system:

```

1006 \RequirePackage{comment}
1007 \excludecomment{CCSXML}

\@concepts This is the storage macro for concepts
1008 \let\@concepts\@empty

\ccsdesc The first argument is the significance, the second is the concept(s)
1009 \newcommand\ccsdesc[2][100]{%
1010   \ccsdesc@parse#1~#2~}

\ccsdesc@parse The parser of the expression Significance~General~Specific:
1011 \def\ccsdesc@parse#1~#2~#3~{%
1012   \expandafter\ifx\csname CCS@#2\endcsname\relax
1013     \expandafter\gdef\csname CCS@#2\endcsname{\textbullet\textbf{#2} $\to$ }%
1014     \g@addto@macro{\@concepts}{\csname CCS@#2\endcsname}\fi
1015   \expandafter\g@addto@macro\expandafter{\csname CCS@#2\endcsname}{%
1016     \ifnum#1>499\textbf{#3; }else
1017     \ifnum#1>299\textit{#3; }\else
1018     #3; \fi\fi}}

```

3.11 Copyright system

This is from acmcopyright.sty

```

\if@printcopyright A flag whether to print copyright symbol
1019 \newif\if@printcopyright
1020 \@printcopyrighttrue

\if@printpermission Whether to print permission block
1021 \newif\if@printpermission
1022 \@printpermissiontrue

\if@acmowned Whether ACM owns the rights to the paper
1023 \newif\if@acmowned
1024 \@acmownedtrue

Keys:
1025 \define@choicekey*{ACM@}{acmcopyrightmode}[%
1026   \acm@copyrightinput\acm@copyrightmode]{none,acmcopyright,acmlicensed,%
1027   rightsretained,usgov,usgovmixed,cagov,cagovmixed,%
1028   licensedusgovmixed,licensedcagovmixed,othergov,licensedothergov}{%
1029   \@printpermissiontrue
1030   \@printcopyrighttrue
1031   \@acmownedtrue
1032   \ifnum\acm@copyrightmode=0\relax % none
1033   \@printpermissionfalse
1034   \@printcopyrightfalse
1035   \@acmownedfalse
1036   \fi

```

```

1037 \ifnum\acm@copyrightmode=2\relax % acmlicensed
1038 \@acmownedfalse
1039 \fi
1040 \ifnum\acm@copyrightmode=3\relax % rightsretained
1041 \@acmownedfalse
1042 \fi
1043 \ifnum\acm@copyrightmode=4\relax % usgov
1044 \@printpermissiontrue
1045 \@printcopyrightfalse
1046 \@acmownedfalse
1047 \fi
1048 \ifnum\acm@copyrightmode=6\relax % cagov
1049 \@acmownedfalse
1050 \fi
1051 \ifnum\acm@copyrightmode=8\relax % licensedusgovmixed
1052 \@acmownedfalse
1053 \fi
1054 \ifnum\acm@copyrightmode=9\relax % licensedcagovmixed
1055 \@acmownedfalse
1056 \fi
1057 \ifnum\acm@copyrightmode=10\relax % othergov
1058 \@acmownedtrue
1059 \fi
1060 \ifnum\acm@copyrightmode=11\relax % licensedothergov
1061 \@acmownedfalse
1062 \@printcopyrightfalse
1063 \fi}

```

\setcopyright This is the syntactic sugar around setting keys.

```

1064 \def\setcopyright#1{\setkeys{ACM@}{acmcopyrightmode=#1}}
1065 \setcopyright{acmcopyright}

```

\@copyrightowner Here is the owner of the copyright

```

1066 \def\@copyrightowner{%
1067 \ifcase\acm@copyrightmode\relax % none
1068 \or % acmcopyright
1069 ACM\@.
1070 \or % acmlicensed
1071 Copyright held by the owner/author(s). Publication rights licensed to
1072 ACM\@.
1073 \or % rightsretained
1074 Copyright held by the owner/author(s).
1075 \or % usgov
1076 \or % usgovmixed
1077 ACM\@.
1078 \or % cagov
1079 Crown in Right of Canada.
1080 \or %cagovmixed
1081 ACM\@.
1082 \or %licensedusgovmixed

```

```

1083 Copyright held by the owner/author(s). Publication rights licensed to
1084 ACM\@.
1085 \or %licensedcagovmixed
1086 Copyright held by the owner/author(s). Publication rights licensed to
1087 ACM\@.
1088 \or % othergov
1089 ACM\@.
1090 \or % licensedothergov
1091 \fi}

```

\@formatdoi Print a clickable doi

```

1092 \def\@formatdoi#1{\url{http://dx.doi.org/#1}}

```

\@copyrightpermission The canned permission block.

```

1093 \def\@copyrightpermission{%
1094   \ifcase\acm@copyrightmode\relax % none
1095   \or % acmcopyright
1096     Permission to make digital or hard copies of all or part of this
1097     work for personal or classroom use is granted without fee provided
1098     that copies are not made or distributed for profit or commercial
1099     advantage and that copies bear this notice and the full citation on
1100     the first page. Copyrights for components of this work owned by
1101     others than ACM must be honored. Abstracting with credit is
1102     permitted. To copy otherwise, or republish, to post on servers or to
1103     redistribute to lists, requires prior specific permission
1104     and\hspace*{.5pt}/or a fee. Request permissions from
1105     permissions@acm.org.
1106   \or % acmlicensed
1107     Permission to make digital or hard copies of all or part of this
1108     work for personal or classroom use is granted without fee provided
1109     that copies are not made or distributed for profit or commercial
1110     advantage and that copies bear this notice and the full citation on
1111     the first page. Copyrights for components of this work owned by
1112     others than the author(s) must be honored. Abstracting with credit
1113     is permitted. To copy otherwise, or republish, to post on servers
1114     or to redistribute to lists, requires prior specific permission
1115     and\hspace*{.5pt}/or a fee. Request permissions from
1116     permissions@acm.org.
1117   \or % rightsretained
1118     Permission to make digital or hard copies of part or all of this work
1119     for personal or classroom use is granted without fee provided that
1120     copies are not made or distributed for profit or commercial advantage
1121     and that copies bear this notice and the full citation on the first
1122     page. Copyrights for third-party components of this work must be
1123     honored. For all other uses, contact the
1124     owner\hspace*{.5pt}/author(s).
1125   \or % usgov
1126     This paper is authored by an employee(s) of the United States
1127     Government and is in the public domain. Non-exclusive copying or
1128     redistribution is allowed, provided that the article citation is

```

1129 given and the authors and agency are clearly identified as its
 1130 source.
 1131 \or % usgovmixed
 1132 ACM acknowledges that this contribution was authored or co-authored
 1133 by an employee, or contractor of the national government. As such,
 1134 the Government retains a nonexclusive, royalty-free right to
 1135 publish or reproduce this article, or to allow others to do so, for
 1136 Government purposes only. Permission to make digital or hard copies
 1137 for personal or classroom use is granted. Copies must bear this
 1138 notice and the full citation on the first page. Copyrights for
 1139 components of this work owned by others than ACM must be
 1140 honored. To copy otherwise, distribute, republish, or post,
 1141 requires prior specific permission and\hspace*{.5pt}/or a
 1142 fee. Request permissions from permissions@acm.org.
 1143 \or % cagov
 1144 This article was authored by employees of the Government of Canada.
 1145 As such, the Canadian government retains all interest in the
 1146 copyright to this work and grants to ACM a nonexclusive,
 1147 royalty-free right to publish or reproduce this article, or to allow
 1148 others to do so, provided that clear attribution is given both to
 1149 the authors and the Canadian government agency employing them.
 1150 Permission to make digital or hard copies for personal or classroom
 1151 use is granted. Copies must bear this notice and the full citation
 1152 on the first page. Copyrights for components of this work owned by
 1153 others than the Canadian Government must be honored. To copy
 1154 otherwise, distribute, republish, or post, requires prior specific
 1155 permission and\hspace*{.5pt}/or a fee. Request permissions from
 1156 permissions@acm.org.
 1157 \or % cagovmixed
 1158 ACM acknowledges that this contribution was co-authored by an
 1159 affiliate of the national government of Canada. As such, the Crown
 1160 in Right of Canada retains an equal interest in the copyright.
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 1162 government agency affiliation. Permission to make digital or hard
 1163 copies for personal or classroom use is granted. Copies must bear
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 1165 components of this work owned by others than ACM must be honored.
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 1172 or affiliate of the United States government. As such, the
 1173 Government retains a nonexclusive, royalty-free right to publish or
 1174 reproduce this article, or to allow others to do so, for Government
 1175 purposes only.
 1176 \or % licensedcagovmixed
 1177 Publication rights licensed to ACM\@. ACM acknowledges that this
 1178 contribution was authored or co-authored by an employee, contractor

```

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1181 reproduce this article, or to allow others to do so, for Government
1182 purposes only.
1183 \or % othergov
1184 ACM acknowledges that this contribution was authored or co-authored
1185 by an employee, contractor or affiliate of a national government. As
1186 such, the Government retains a nonexclusive, royalty-free right to
1187 publish or reproduce this article, or to allow others to do so, for
1188 Government purposes only.
1189 \or % licensedothergov
1190 Publication rights licensed to ACM\@. ACM acknowledges that this
1191 contribution was authored or co-authored by an employee, contractor
1192 or affiliate of a national government. As such, the Government
1193 retains a nonexclusive, royalty-free right to publish or reproduce
1194 this article, or to allow others to do so, for Government purposes
1195 only.
1196 \fi}

\copyrightyear By default, the copyright year is the same as \acmYear, but one can override this:
1197 \def\copyrightyear#1{\def\@copyrightyear{#1}}
1198 \copyrightyear{\@acmYear}

\@teaserfigures The teaser figures container
1199 \def\@teaserfigures{}

teaserfigure The teaser figure
1200 \newenvironment{teaserfigure}{\Collect@Body\@saveteaser}{}

\@saveteaser Saving the teaser
1201 \long\def\@saveteaser#1{\g@addto@macro\@teaserfigures{\@teaser{#1}}}

\thanks We redefine amsart \thanks, so the anonymous key works
1202 \renewcommand{\thanks}[1]{%
1203   \@ifnotempty{#1}{%
1204     \if@ACM@anonymous
1205       \g@addto@macro\thankses{\thanks{A note}}%
1206     \else
1207       \g@addto@macro\thankses{\thanks{#1}}%
1208     \fi}}

```

3.12 Typesetting top matter

```

\mktitle@bx Some of our formats use two column design, some use one column one. In all cases
we use wide title. Thus we typeset the top matter in a special box to be use in the
construction \@twocolumn[{box}].
1209 \newbox\mktitle@bx

```

\maketitle The (in)famous \maketitle. Note that in sigchi-a mode authors are *not* in the title box.

```

1210 \def\maketitle{%
1211   \if@ACM@anonymous
1212     % Anonymize omission of \author-s
1213     \ifnum\num@authors=0\author{}\fi
1214   \fi
1215   \begingroup
1216   \let\@footnotemark\@footnotemark@nolink
1217   \let\@footnotetext\@footnotetext@nolink
1218   \renewcommand\thefootnote{\@fnsymbol\c@footnote}%
1219   \@topnum\z@ % this prevents figures from falling at the top of page
1220     % 1
1221   \hsize=\textwidth
1222   \def\@makefnmark{\hbox{\@textsuperscript{\@thefnmark}}}
1223   \mktitle\if@ACM@sigchiamode\else\mkauthors\fi\mkteasers
1224   \@printtopmatter
1225   \if@ACM@sigchiamode\mkauthors\fi
1226   \setcounter{footnote}{0}%
1227   \def\@makefnmark{\hbox{\@textsuperscript{\normalfont\@thefnmark}}}
1228   \@titlenotes
1229   \@subtitlenotes
1230   \@authornotes
1231   \let\@makefnmark\relax \let\@thefnmark\relax
1232   \let\@makefntext\@noindent
1233   \ifx\@empty\thankses\else
1234     \@footnotetext{\def\par{\let\par\@par}\parindent\z@\@setthanks}%
1235   \fi
1236   \footnotetextcopyrightpermission{\parindent\z@\parskip0.1\baselineskip
1237   \if@ACM@authorversion\else
1238     \if@printpermission\copyrightpermission\par\fi
1239   \fi
1240   \if@ACM@manuscript\else
1241     \if@ACM@journal\else % Print the conference short name
1242       {\itshape \acmConference@shortname, \acmConference@venue}\par
1243     \fi
1244   \fi
1245   \if@printcopyright
1246     \copyright\ \@copyrightyear\ \@copyrightowner\
1247   \else
1248     \@copyrightyear.\
1249   \fi
1250   \if@ACM@manuscript
1251     Manuscript submitted to ACM\
1252   \else
1253     \if@ACM@authorversion
1254       This is the author's version of the work. It is posted here for
1255       your personal use. Not for redistribution. The definitive Version
1256       of Record was published in
1257       \if@ACM@journal

```



```

1258         \emph{\@journalName}%
1259     \else
1260         \emph{Proceedings of \acmConference@name, \acmConference@date}%
1261     \fi
1262     \ifx\@acmDOI\@empty
1263         .
1264     \else
1265         , \@formatdoi{\@acmDOI}.
1266     \fi\
1267 \else
1268     \if@ACM@journal
1269         \@permissionCodeOne/\@acmYear/\@acmMonth-ART\@acmArticle\
1270         \$\@acmPrice\
1271     \else % Conference
1272         \@acmISBN
1273         \ifx\@acmPrice\@empty.\else\dots$\@acmPrice\fi\
1274     \fi
1275 \fi
1276 \fi
1277 DOI: \nolinkurl{\@acmDOI}}}%
1278 \endgroup
1279 \setcounter{footnote}{0}%
1280 \@mkabstract
1281 \if@ACM@printcss
1282     \ifx\@concepts\@empty\else\bgroup
1283         {\@specialsection{CCS Concepts}%
1284         \@concepts\par}\egroup
1285     \fi
1286 \fi
1287 \if\@terms\@empty\else\bgroup
1288     {\@specialsection{General Terms}%
1289     \@terms\par}\egroup
1290 \fi
1291 \ifx\@keywords\@empty\else\bgroup
1292     {\if@ACM@journal
1293         \@specialsection{Additional Key Words and Phrases}%
1294     \else
1295         \@specialsection{Keywords}%
1296     \fi
1297     \@keywords}\par\egroup
1298 \fi
1299 \andify\authors
1300 \andify\shortauthors
1301 \global\let\authors=\authors
1302 \global\let\shortauthors=\shortauthors
1303 \if@ACM@printbib
1304     \@mkbibcitation
1305 \fi
1306 \hypersetup{pdfauthor={\authors},
1307     pdftitle={\@title}, pdfkeywords={\@concepts}}}%

```

```

1308 \@printendtopmatter
1309 \@afterindentfalse
1310 \@afterheading
1311 }

```

`\@specialsection` This macro starts section for proceedings and uses small for journals

```

1312 \def\@specialsection#1{%
1313   \ifcase\ACM@format@nr
1314   \relax % manuscript
1315   \par\medskip\small\noindent#1: %
1316   \or % acmsmall
1317   \par\medskip\small\noindent#1: %
1318   \or % acmlarge
1319   \par\medskip\small\noindent#1: %
1320   \or % acmtog
1321   \par\medskip\small\noindent#1: %
1322   \or % sigconf
1323   \section*{#1}%
1324   \or % siggraph
1325   \section*{#1}%
1326   \or % sigplan
1327   \paragraph*{#1}%
1328   \or % sigchi
1329   \section*{#1}%
1330   \or % sigchi-a
1331   \section*{#1}%
1332   \fi}

```

`\@printtopmatter` The printing of top matter starts the new page, and uses the given title box. Note that for sigchi-a we print badges here rather than in `\mktitle` since we want them on the margins.

```

1333 \def\@printtopmatter{%
1334   \ifx\@startPage\@empty
1335     \gdef\@startPage{1}%
1336   \else
1337     \setcounter{page}{\@startPage}%
1338   \fi
1339   \thispagestyle{firstpagestyle}%
1340   \noindent
1341   \ifcase\ACM@format@nr
1342   \relax % manuscript
1343   \box\mktitle@bx\par
1344   \noindent\hrulefill\par
1345   \or % acmsmall
1346   \box\mktitle@bx\par
1347   \noindent\hrulefill\par
1348   \or % acmlarge
1349   \box\mktitle@bx\par
1350   \noindent\hrulefill\par

```

```

1351 \or % acmtog
1352   \twocolumn[\box\mktitle@bx]%
1353 \or % sigconf
1354   \twocolumn[\box\mktitle@bx]%
1355 \or % siggraph
1356   \twocolumn[\box\mktitle@bx]%
1357 \or % sigplan
1358   \twocolumn[\box\mktitle@bx]%
1359 \or % sigchi
1360   \twocolumn[\box\mktitle@bx]%
1361 \or % sigchi-a
1362   \par\box\mktitle@bx\par\bigskip
1363   \if@ACM@badge
1364     \marginpar{\noindent
1365       \ifx\@acmBadgeL@image\empty\else
1366         \href{\@acmBadgeL@url}{%
1367           \includegraphics[width=\@ACM@badge@width]{\@acmBadgeL@image}}%
1368         \hskip\@ACM@badge@skip
1369       \fi
1370       \ifx\@acmBadgeR@image\empty\else
1371         \href{\@acmBadgeR@url}{%
1372           \includegraphics[width=\@ACM@badge@width]{\@acmBadgeR@image}}%
1373       \fi}%
1374   \fi
1375 \fi
1376 }

```

\@mktitle The title of the article

```

1377 \def\@mktitle{%
1378   \ifcase\ACM@format@nr
1379   \relax % manuscript
1380   \@mktitle@i
1381 \or % acmsmall
1382   \@mktitle@i
1383 \or % acmlarge
1384   \@mktitle@i
1385 \or % acmtog
1386   \@mktitle@i
1387 \or % sigconf
1388   \@mktitle@iii
1389 \or % siggraph
1390   \@mktitle@iii
1391 \or % sigplan
1392   \@mktitle@iii
1393 \or % sigchi
1394   \@mktitle@iii
1395 \or % sigchi-a
1396   \@mktitle@iv
1397 \fi
1398 }

```

```

\@titlefont The font to typeset title
1399 \def\@titlefont{%
1400   \ifcase\ACM@format@nr
1401   \relax % manuscript
1402   \LARGE\bfseries\sffamily
1403   \or % acmsmall
1404   \LARGE\bfseries\sffamily
1405   \or % acmlarge
1406   \LARGE\bfseries\sffamily
1407   \or % acmtog
1408   \Huge\sffamily
1409   \or % sigconf
1410   \Huge\sffamily\bfseries
1411   \or % siggraph
1412   \Huge\sffamily\bfseries
1413   \or % sigplan
1414   \Huge\bfseries
1415   \or % sigchi
1416   \Huge\sffamily\bfseries
1417   \or % sigchi-a
1418   \Huge\bfseries
1419   \fi}

\@subtitlefont The font to typeset title
1420 \def\@subtitlefont{%
1421   \ifcase\ACM@format@nr
1422   \relax % manuscript
1423   \mdseries
1424   \or % acmsmall
1425   \mdseries
1426   \or % acmlarge
1427   \mdseries
1428   \or % acmtog
1429   \LARGE
1430   \or % sigconf
1431   \LARGE\mdseries
1432   \or % siggraph
1433   \LARGE\mdseries
1434   \or % sigplan
1435   \LARGE\mdseries
1436   \or % sigchi
1437   \LARGE\mdseries
1438   \or % sigchi-a
1439   \mdseries
1440   \fi}

\@mktitle@i The version of \mktitle for most journals
1441 \def\@mktitle@i{\hsize=\textwidth
1442   \@ACM@title@width=\hsize

```

```

1443 \ifx\@acmBadgeL@image\@empty\else
1444   \advance\@ACM@title@width by -\@ACM@badge@width
1445   \advance\@ACM@title@width by -\@ACM@badge@skip
1446 \fi
1447 \ifx\@acmBadgeR@image\@empty\else
1448   \advance\@ACM@title@width by -\@ACM@badge@width
1449   \advance\@ACM@title@width by -\@ACM@badge@skip
1450 \fi
1451 \setbox\mktitle@bx=\vbox{\noindent\@titlefont
1452   \ifx\@acmBadgeL@image\@empty\else
1453     \raisebox{-.5\baselineskip}[\z@][\z@]{\href{\@acmBadgeL@url}{%
1454       \includegraphics[width=\@ACM@badge@width]{\@acmBadgeL@image}}}%
1455     \hskip\@ACM@badge@skip
1456   \fi
1457   \parbox[t]{\@ACM@title@width}{\raggedright
1458     \@titlefont\noindent
1459     \@title
1460   \ifx\@subtitle\@empty\else
1461     \par\noindent{\@subtitlefont\@subtitle}
1462   \fi}%
1463   \ifx\@acmBadgeR@image\@empty\else
1464     \hskip\@ACM@badge@skip
1465     \raisebox{-.5\baselineskip}[\z@][\z@]{\href{\@acmBadgeR@url}{%
1466       \includegraphics[width=\@ACM@badge@width]{\@acmBadgeR@image}}}%
1467   \fi
1468   \par\bigskip}}%

```

\@mktitle@ii The version of \@mktitle for TOG. Since v1.06 is subsumed by the \@mktitle@i macro

\@mktitle@iii The version of \@mktitle for sigproc. Note that since the title is centered, we leave the space for the left badge even if only the right badge is defined.

```

1469 \def\@mktitle@iii{\hsize=\textwidth
1470   \setbox\mktitle@bx=\vbox{\@titlefont\centering
1471     \@ACM@title@width=\hsize
1472     \if@ACM@badge
1473       \advance\@ACM@title@width by -2\@ACM@badge@width
1474       \advance\@ACM@title@width by -2\@ACM@badge@skip
1475       \parbox[b]{\@ACM@badge@width}{\strut
1476         \ifx\@acmBadgeL@image\@empty\else
1477           \raisebox{-.5\baselineskip}[\z@][\z@]{\href{\@acmBadgeL@url}{%
1478             \includegraphics[width=\@ACM@badge@width]{\@acmBadgeL@image}}}%
1479         \fi}%
1480       \hskip\@ACM@badge@skip
1481     \fi
1482     \parbox[t]{\@ACM@title@width}{\centering\@titlefont
1483       \@title
1484       \ifx\@subtitle\@empty\else
1485         \par\noindent{\@subtitlefont\@subtitle}
1486       \fi
1487     }%

```

```

1488     \if@ACM@badge
1489     \hskip\@ACM@badge@skip
1490     \parbox[b]{\@ACM@badge@width}{\strut
1491     \ifx\@acmBadgeR@image\@empty\else
1492     \raisebox{-.5\baselineskip}[\z@][\z@]{\href{\@acmBadgeR@url}{%
1493     \includegraphics[width=\@ACM@badge@width]{\@acmBadgeR@image}}}%
1494     \fi}%
1495     \fi
1496     \par\bigskip}}%

\@mktitle@iv The version of \@mktitle for sigchi-a
1497 \def\@mktitle@iv{\hsize=\textwidth
1498     \setbox\mktitle@bx=\vbox{\raggedright\leftskip5pc\@titlefont
1499     \noindent\leavevmode\leaders\hrule height 2pt\hfill\kern0pt\par
1500     \noindent\@title
1501     \ifx\@subtitle\@empty\else
1502     \par\noindent\@subtitlefont\@subtitle
1503     \fi
1504     \par\bigskip}}%

\@mkauthors Typesetting authors
1505 \def\@mkauthors{\begingroup
1506     \hsize=\textwidth
1507     \ifcase\ACM@format@nr
1508     \relax % manuscript
1509     \@mkauthors@i
1510     \or % acmsmall
1511     \@mkauthors@i
1512     \or % acmlarge
1513     \@mkauthors@i
1514     \or % acmtog
1515     \@mkauthors@ii
1516     \or % sigconf
1517     \@mkauthors@iii
1518     \or % siggraph
1519     \@mkauthors@iii
1520     \or % sigplan
1521     \@mkauthors@iii
1522     \or % sigchi
1523     \@mkauthors@iii
1524     \or % sigchi-a
1525     \@mkauthors@iv
1526     \fi
1527     \endgroup
1528 }

\@authorfont Somehow different conferences use different fonts for author names. Why?
1529 \def\@authorfont{\Large\sffamily}

```

\@affiliationfont Font for affiliations

```
1530 \def\@affiliationfont{\normalsize\normalfont}
```

Adjusting fonts for different formats

```
1531 \ifcase\ACM@format@nr
1532 \relax % manuscript
1533 \or % acmsmall
1534 \or % acmlarge
1535 \or % acmtog
1536 \def\@authorfont{\LARGE\sffamily}
1537 \def\@affiliationfont{\large}
1538 \or % sigconf
1539 \def\@authorfont{\LARGE}
1540 \def\@affiliationfont{\large}
1541 \or % siggraph
1542 \def\@authorfont{\normalsize\normalfont}
1543 \def\@affiliationfont{\normalsize\normalfont}
1544 \or % sigplan
1545 \def\@authorfont{\Large\normalfont}
1546 \def\@affiliationfont{\normalsize\normalfont}
1547 \or % sigchi
1548 \def\@authorfont{\bfseries}
1549 \def\@affiliationfont{\mdseries}
1550 \or % sigchi-a
1551 \def\@authorfont{\bfseries}
1552 \def\@affiliationfont{\mdseries}
1553 \fi
```

\@mkauthors@i This is version used in most formats. Note that \and between authors with the same affiliation becomes _and_:

```
1554 \def\@mkauthors@i{%
1555   \def\@currentauthors{}%
1556   \def\and{%
1557     \andify\@currentauthors\par\noindent
1558     \@currentauthors\def\@currentauthors{}}%
1559   \def\@author##1{%
1560     \ifx\@currentauthors\@empty
1561       \gdef\@currentauthors{\@authorfont\MakeUppercase{##1}}%
1562     \else
1563       \g@addto@macro{\@currentauthors}{\and\MakeUppercase{##1}}%
1564     \fi
1565   \def\and{}}%
1566   \def\email##1##2{%
1567   \def\affiliation##1##2{%
1568     \ifx\@currentauthors\@empty\else
1569       \andify\@currentauthors\par\noindent\@currentauthors
1570     \fi
1571   \def\@currentauthors{}\def\tempa{##2}\ifx\tempa\@empty\else
1572   \unskip, {\@affiliationfont##2}\fi\def\and{\par\noindent}}%
```

```

1573 \global\setbox\mktitle@bx=\vbox{\noindent\box\mktitle@bx\par\medskip
1574 \noindent\addresses\andify\@currentauthors\par\noindent\@currentauthors\par\medskip}%
1575 }

```

\@mkauthors@ii This is version used in acmtog. A more vertical design

```

1576 \def\@mkauthors@ii{\par\medskip
1577 \def\@currentauthors{}%
1578 \def\and{}%
1579 \def\@author##1{%
1580 \ifx\@currentauthors\@empty
1581 \gdef\@currentauthors{\@authorfont
1582 \MakeUppercase{##1}}%
1583 \else
1584 \g@addto@macro{\@currentauthors}{\and\MakeUppercase{##1}}%
1585 \fi\def\and{}}%
1586 \def\email##1##2{%
1587 \def\affiliation##1##2{%
1588 \ifx\@currentauthors\@empty\else
1589 \andify\@currentauthors\par\noindent\@currentauthors
1590 \fi
1591 \def\@currentauthors{\def\@tempa{##2}\ifx\@tempa\@empty\else
1592 \par\noindent{\@affiliationfont##2}\fi
1593 \def\and{\par\noindent{\@affiliationfont and}\par
1594 \noindent\def\and{}}}%
1595 \global\setbox\mktitle@bx=\vbox{\noindent\box\mktitle@bx\par\medskip
1596 \noindent\addresses\andify\@currentauthors\par\noindent\@currentauthors\par\medskip}%
1597 }

```

\author@bx The box to put individual author to

```

1598 \newbox\author@bx

```

\author@bx@wd The width of the author box

```

1599 \newdimen\author@bx@wd

```

\author@bx@sep The separation between the author boxes

```

1600 \newskip\author@bx@sep
1601 \author@bx@sep=1pc\relax

```

\@mkauthors@iii The sigconf version. Here we use centered design with each author in a separate box.

```

1602 \def\@mkauthors@iii{%

```

First, we need to determine the design of the author strip. The boxes are separated by \author@bx@sep plus two \author@bx@sep margins. This means that each box must be of width $(\text{textwidth} - \text{author@bx@sep})/N - \text{author@bx@sep}$, where N is the number of boxes per row.

```

1603 \author@bx@wd=\textwidth\relax
1604 \advance\author@bx@wd by -\author@bx@sep\relax
1605 \ifcase\num@authors
1606 \relax % 0?

```



```

1607 \or % 1=one author per row
1608 \or % 2=two authors per row
1609 \divide\author@bx@wd by \num@authors\relax
1610 \or % 3=three authors per row
1611 \divide\author@bx@wd by \num@authors\relax
1612 \or % 4=two authors per row (!)
1613 \divide\author@bx@wd by 2\relax
1614 \else % three authors per row
1615 \divide\author@bx@wd by 3\relax
1616 \fi
1617 \advance\author@bx@wd by -\author@bx@sep\relax

```

Now, parsing of \addresses:

```

1618 \gdef\@currentauthors{}%
1619 \gdef\@currentaffiliation{}%
1620 \def\@author##1{\ifx\@currentauthors\@empty
1621 \gdef\@currentauthors{\par##1}%
1622 \else
1623 \g@addto@macro\@currentauthors{\quad##1}%
1624 \fi}%
1625 \def\email##1##2{\ifx\@currentaffiliation\@empty
1626 \gdef\@currentaffiliation{\nolinkurl{##2}}%
1627 \else
1628 \g@addto@macro\@currentaffiliation{\par\nolinkurl{##2}}%
1629 \fi}%
1630 \def\affiliation##1##2{\ifx\@currentaffiliation\@empty
1631 \gdef\@currentaffiliation{##2}%
1632 \else
1633 \g@addto@macro\@currentaffiliation{\par##2}%
1634 \fi}%

```

Actual typesetting is done by \and macro

```

1635 \def\and{\bgroup\hsize=\author@bx@wd\def\and{\quad}%
1636 \global\setbox\author@bx=\vtop{\centering
1637 \authorfont\@currentauthors\par\@affiliationfont
1638 \@currentaffiliation}\egroup
1639 \box\author@bx\hspace{\author@bx@sep}%
1640 \gdef\@currentauthors{}%
1641 \gdef\@currentaffiliation{}}%

```

And here we use it:

```

1642 \hsize=\textwidth
1643 \global\setbox\mktitle@bx=\vbox{\noindent
1644 \box\mktitle@bx\par\medskip\leavevmode
1645 \lineskip=1pc\relax\centering\hspace*{-1em}%
1646 \addresses\and\par\bigskip}}

```

\@mkauthors@iv The sigchia version. Now we put authors in the main text, and no more than 2 authors per line.

```

1647 \def\@mkauthors@iv{%

```

First, we need to determine the design of the author strip. The boxes are separated by `\author@bx@sep` plus two `\author@bx@sep` margins. This means that each box must be of width $(\text{\textwidth} - \text{\author@bx@sep})/N - \text{\author@bx@sep}$, where N is the number of boxes per row.

```

1648 \author@bx@wd=\columnwidth\relax
1649 \advance\author@bx@wd by -\author@bx@sep\relax
1650 \ifcase\num@authors
1651 \relax % 0?
1652 \or % 1=one author per row
1653 \else % 2=two authors per row
1654 \divide\author@bx@wd by 2\relax
1655 \fi
1656 \advance\author@bx@wd by -\author@bx@sep\relax

```

Now, parsing of `\addresses`:

```

1657 \gdef\@currentauthors{}%
1658 \gdef\@currentaffiliation{}%
1659 \def\@author##1{\ifx\@currentauthors\empty
1660 \gdef\@currentauthors{\par##1}%
1661 \else
1662 \g@addto@macro\@currentauthors{\quad##1}%
1663 \fi}%
1664 \def\email##1##2{\ifx\@currentaffiliation\empty
1665 \gdef\@currentaffiliation{\nolinkurl{##2}}%
1666 \else
1667 \g@addto@macro\@currentaffiliation{\par\nolinkurl{##2}}%
1668 \fi}%
1669 \def\affiliation##1##2{\ifx\@currentaffiliation\empty
1670 \gdef\@currentaffiliation{##2}%
1671 \else
1672 \g@addto@macro\@currentaffiliation{\par##2}%
1673 \fi}%

```

Actual typesetting is done by `\and` macro

```

1674 \def\and{\bgroup\hsize=\author@bx@wd\def\and{\quad}%
1675 \global\setbox\author@bx=\vtop{\raggedright
1676 \authorfont\@currentauthors\par\affiliationfont
1677 \@currentaffiliation}\egroup
1678 \box\author@bx\hskip\author@bx@sep
1679 \gdef\@currentauthors{}%
1680 \gdef\@currentaffiliation{}}%

```

And here we use it:

```

1681 \bgroup\hsize=\columnwidth
1682 \par\raggedright\leftskip=\z@
1683 \lineskip=1pc\noindent\addresses\and\par\bigskip\egroup}

```

`\authornotemark` Adding footnotemark to authors

```

1684 \def\@authornotemark{\g@addto@macro\@currentauthors{\footnotemark}}

```

`\@mkteasers` Typesetting teasers

```

1685 \def\@mkteasers{%
1686   \ifx\@teaserfigures\@empty\else
1687     \def\@teaser##1{\par\bigskip\bgroup
1688       \captionsetup{type=figure}##1\egroup\par}
1689     \global\setbox\mktitle@bx=\vbox{\noindent\box\mktitle@bx\par
1690       \noindent\@teaserfigures\par\medskip}%
1691   \fi}

```

`\@setaddresses` This is an amsart macro, which we do not need.

```

1692 \def\@setaddresses{}

```

`\@mkabstract` Typesetting abstract

```

1693 \def\@mkabstract{\bgroup
1694   \ifx\@abstract\@empty\else
1695     {\if@ACM@journal
1696       \small\noindent
1697     \else
1698       \section*{Abstract}%
1699     \fi
1700     \@abstract\par}%
1701   \fi\egroup}

```

`\@mkbibcitation` Print bibcitation format

```

1702 \def\@mkbibcitation{\bgroup
1703   \par\medskip\small\noindent{\bfseries ACM Reference format:}\par
1704   \noindent\authors. \@acmYear. \@title. \textit{\@journalNameShort}
1705   \@acmVolume, \@acmNumber, Article~\@acmArticle\
1706   (\@acmPubDate), \ref{TotPages}~pages.\par
1707   \noindent DOI: \nolinkurl{\@acmDOI}
1708 \par\egroup}

```

`\@printendtopmatter` End the top matter

```

1709 \def\@printendtopmatter{\par\medskip
1710   \ifcase\ACM@format@nr
1711     \relax % manuscript
1712     \noindent\hrulefill\par\medskip
1713   \or % acmsmall
1714     \noindent\hrulefill\par\medskip
1715   \or % acmlarge
1716     \noindent\hrulefill\par\medskip
1717   \or % acmtog
1718     \par\bigskip
1719   \or % sigconf
1720     \par\bigskip
1721   \or % siggraph
1722     \par\bigskip
1723   \or % sigplan
1724     \par\bigskip

```

```

1725 \or % sigchi
1726 \par\bigskip
1727 \or % sigchi-a
1728 \fi
1729 }

```

\setthanks We redefine \setthanks using \long

```

1730 \def\setthanks{\long\def\thanks##1{\par##1\@addpunct.}\thankses}

```

3.13 Headers and Footers

We use fancyhdr for our headers and footers:

```

1731 \RequirePackage{fancyhdr}

```

\ACM@linecount@bx This is the box displayed in the review mode

```

1732 \if@ACM@review
1733 \newsavebox{\ACM@linecount@bx}
1734 \savebox{\ACM@linecount@bx}[4em][t]{\parbox[t]{4em}{%
1735 \newlength\ACM@linecount@bxht\setlength{\ACM@linecount@bxht}{-\baselineskip}
1736 \@tempcnta\@ne\relax
1737 \loop{\color{ACMRed}\scriptsize\the\@tempcnta}\@tempcnta\@ne\relax
1738 \advance\@tempcnta by \@ne
1739 \addtolength{\ACM@linecount@bxht}{\baselineskip}
1740 \ifdim\ACM@linecount@bxht<\textheight\repeat}}
1741 \fi

```

\ACM@linecount How to display the box

```

1742 \def\ACM@linecount{%
1743 \if@ACM@review
1744 \begin{picture}(0,0)%
1745 \put(-26,-22){\usebox{\ACM@linecount@bx}}%
1746 \end{picture}%
1747 \fi}

```

standardpagestyle The pagestyle for all pages but the first one

```

1748 \fancypagestyle{standardpagestyle}{%
1749 \fancyhf{}%
1750 \renewcommand{\headrulewidth}{\z@}%
1751 \renewcommand{\footrulewidth}{\z@}%
1752 \ifcase\ACM@format@nr
1753 \relax % manuscript
1754 \fancyhead[RE]{\thepage}%
1755 \fancyhead[LO]{\ACM@linecount\thepage}%
1756 \fancyhead[LE]{\ACM@linecount\shortauthors}%
1757 \fancyhead[RO]{\shorttitle}%
1758 \fancyfoot[RO,LE]{\footnotesize Manuscript submitted to ACM}%
1759 \or % acmsmall
1760 \fancyhead[RE]{\sffamily\@acmArticle:\thepage}%
1761 \fancyhead[LO]{\ACM@linecount\sffamily\@acmArticle:\thepage}%

```

```

1762 \fancyhead[LE]{\ACM@linecount\sffamily\shortauthors}%
1763 \fancyhead[RO]{\sffamily\shorttitle}%
1764 \fancyfoot[RO,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
1765 \@acmNumber, Article \@acmArticle. Publication date: \@acmPubDate.}%
1766 \or % acmlarge
1767 \fancyhead[LE]{\ACM@linecount\sffamily
1768 \@acmArticle:\thepage\quad\textbullet\quad\shortauthors}%
1769 \fancyhead[LO]{\ACM@linecount}%
1770 \fancyhead[RO]{\sffamily
1771 \shorttitle\quad\textbullet\quad\@acmArticle:\thepage}%
1772 \fancyfoot[RO,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
1773 \@acmNumber, Article \@acmArticle. Publication date: \@acmPubDate.}%
1774 \or % acmtog
1775 \fancyhead[LE]{\ACM@linecount\sffamily
1776 \@acmArticle:\thepage\quad\textbullet\quad\shortauthors}%
1777 \fancyhead[LO]{\ACM@linecount}%
1778 \fancyhead[RO]{\sffamily
1779 \shorttitle\quad\textbullet\quad\@acmArticle:\thepage}%
1780 \fancyfoot[RO,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
1781 \@acmNumber, Article \@acmArticle. Publication date: \@acmPubDate.}%
1782 \else % Proceedings
1783 \fancyfoot[R]{\footnotesize\thepage}%
1784 \fancyhead[L]{\ACM@linecount}%
1785 \fi
1786 }
1787 \pagestyle{standardpagestyle}

\@folio@wd Folio blob width, height, offsets and max number
\@folio@ht 1788 \newdimen\@folio@wd
\@folio@voffset 1789 \@folio@wd=\z@
\@folio@max 1790 \newdimen\@folio@ht
1791 \@folio@ht=\z@
1792 \newdimen\@folio@voffset
1793 \@folio@voffset=\z@
1794 \def\@folio@max{1}
1795 \ifcase\ACM@format@nr
1796 \relax % manuscript
1797 \or % acmsmall
1798 \@folio@wd=45.75pt\relax
1799 \@folio@ht=1.25in\relax
1800 \@folio@voffset=.2in\relax
1801 \def\@folio@max{8}
1802 \or % acmlarge
1803 \@folio@wd=43.25pt\relax
1804 \@folio@ht=79pt\relax
1805 \@folio@voffset=.55in\relax
1806 \def\@folio@max{10}
1807 \fi

\@folioblob The macro to typeset the folio blob.

```

```

1808 \def\@folioblob{\@tempcnta=\@acmArticleSeq\relax
First, we calculate \@acmArticleSeq modulo \@folio@max
1809 \loop
1810 \ifnum\@tempcnta>\@folio@max\relax
1811 \advance\@tempcnta by - \@folio@max
1812 \repeat
1813 \advance\@tempcnta by -1\relax
1814 \@tempdima=\@folio@ht\relax
1815 \multiply\@tempdima by \the\@tempcnta\relax
1816 \advance\@tempdima by -\@folio@voffset\relax
1817 \begin{picture}(0,0)
1818 \makebox[\z@]{\raisebox{-\@tempdima}{%
1819 \rlap{%
1820 \raisebox{-0.45\@folio@ht}{\z@}{\z@}{%
1821 \rule{\@folio@wd}{\@folio@ht}}}%
1822 \parbox{\@folio@wd}{%
1823 \centering
1824 \textcolor{white}{\LARGE\bfseries\sffamily\@acmArticle}}}}
1825 \end{picture}}
1826

```

firstpagestyle The pagestyle for the first page only.

```

1827 \fancypagestyle{firstpagestyle}{%
1828 \fancyhf{}%
1829 \renewcommand{\headrulewidth}{\z@}%
1830 \renewcommand{\footrulewidth}{\z@}%
1831 \ifcase\ACM@format@nr
1832 \relax % manuscript
1833 \fancyhead[L]{\ACM@linecount}%
1834 \fancyfoot[R0,LE]{\small\thepage}%
1835 \fancyfoot[RE,LO]{\footnotesize Manuscript submitted to ACM}%
1836 \or % acmsmall
1837 \fancyfoot[R0,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
1838 \@acmNumber, Article \@acmArticle. Publication date:
1839 \@acmPubDate.}%
1840 \fancyhead[LE]{\ACM@linecount\@folioblob}%
1841 \fancyhead[LO]{\ACM@linecount}%
1842 \fancyhead[RO]{\@folioblob}%
1843 \fancyheadoffset[R0,LE]{0.6\@folio@wd}%
1844 \or % acmlarge
1845 \fancyfoot[R0,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
1846 \@acmNumber, Article \@acmArticle. Publication date:
1847 \@acmPubDate.}%
1848 \fancyhead[RO]{\@folioblob}%
1849 \fancyhead[LE]{\ACM@linecount\@folioblob}%
1850 \fancyhead[LO]{\ACM@linecount}%
1851 \fancyheadoffset[R0,LE]{1.4\@folio@wd}%
1852 \or % acmtog
1853 \fancyfoot[R0,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.

```

```

1854 \acmNumber, Article \@acmArticle. Publication date:
1855 \@acmPubDate.}%
1856 \fancyhead[L]{\ACM@linecount}%
1857 \else % Conference proceedings
1858 \fancyhead[L]{\ACM@linecount}%
1859 \fancyfoot[R]{\footnotesize\thepage}%
1860 \fi
1861 }

```

3.14 Sectioning

Sectioning is different for different levels

```

1862 \renewcommand\section{\@startsection{section}{1}{\z@}%
1863 {- .75\baselineskip \@plus -2\p@ \@minus -.2\p@}%
1864 {.25\baselineskip}%
1865 {\@secfont}}
1866 \renewcommand\subsection{\@startsection{subsection}{2}{\z@}%
1867 {- .75\baselineskip \@plus -2\p@ \@minus -.2\p@}%
1868 {.25\baselineskip}%
1869 {\@subsecfont}}
1870 \renewcommand\subsubsection{\@startsection{subsubsection}{3}{10pt}%
1871 {- .5\baselineskip \@plus -2\p@ \@minus -.2\p@}%
1872 {-3.5\p@}%
1873 {\@subsubsecfont\@adddotafter}}
1874 \renewcommand\paragraph{\@startsection{paragraph}{4}{\parindent}%
1875 {- .5\baselineskip \@plus -2\p@ \@minus -.2\p@}%
1876 {-3.5\p@}%
1877 {\@parfont\@adddotafter}}
1878 \renewcommand\part{\@startsection{part}{9}{\z@}%
1879 {-10\p@ \@plus -4\p@ \@minus -2\p@}%
1880 {4\p@}%
1881 {\@parfont}}

```

Fonts for sections etc. are different for different formats. Also, some formats use the ugly period after section number (sigh):

```

1882 \def\@secfont{\sffamily\bfseries\raggedright\MakeUppercase}
1883 \def\@subsecfont{\sffamily\bfseries\raggedright}
1884 \def\@subsubsecfont{\sffamily\itshape}
1885 \def\@parfont{\itshape}
1886 \setcounter{secnumdepth}{3}
1887 \ifcase\ACM@format@nr
1888 \relax % manuscript
1889 \or % acmsmall
1890 \or % acmlarge
1891 \def\@secfont{\sffamily\large\raggedright\MakeUppercase}
1892 \def\@subsecfont{\sffamily\large\raggedright}
1893 \or % acmtog
1894 \def\@secfont{\sffamily\large\raggedright\MakeUppercase}
1895 \def\@subsecfont{\sffamily\large\raggedright}
1896 \or % sigconf

```

```

1897 \def\@secfont{\bfseries\Large\raggedright\MakeUppercase}
1898 \def\@subsecfont{\bfseries\Large\raggedright}
1899 \or % siggraph
1900 \def\@secfont{\bfseries\sffamily\Large\raggedright\MakeUppercase}
1901 \def\@subsecfont{\bfseries\sffamily\Large\raggedright}
1902 \or % sigplan
1903 \def\@secfont{\bfseries\Large\raggedright}
1904 \def\@subsecfont{\bfseries\raggedright}
1905 \renewcommand\subsubsection{\@startsection{subsubsection}{3}{\z@}%
1906   {- .75\baselineskip \@plus -2\p@ \@minus -.2\p@}%
1907   {.25\baselineskip}%
1908   {\@subsubsecfont}}
1909 \def\@subsubsecfont{\bfseries\raggedright}
1910 \renewcommand\paragraph{\@startsection{paragraph}{4}{\z@}%
1911   {- .5\baselineskip \@plus -2\p@ \@minus -.2\p@}%
1912   {-3.5\p@}%
1913   {\@parfont\@addspaceafter}}
1914 \def\@parfont{\bfseries\itshape}
1915 \renewcommand\subparagraph{\@startsection{subparagraph}{5}{\z@}%
1916   {- .5\baselineskip \@plus -2\p@ \@minus -.2\p@}%
1917   {-3.5\p@}%
1918   {\@subparfont\@addspaceafter}}
1919 \def\@subparfont{\itshape}
1920 \or % sigchi
1921 \setcounter{secnumdepth}{1}
1922 \def\@secfont{\bfseries\sffamily\raggedright\MakeUppercase}
1923 \def\@subsecfont{\bfseries\sffamily\raggedright}
1924 \or % sigchi-a
1925 \setcounter{secnumdepth}{0}
1926 \def\@secfont{\bfseries\sffamily\raggedright\MakeUppercase}
1927 \def\@subsecfont{\bfseries\sffamily\raggedright}
1928 \fi

```

\@adddotafter Add punctuation after the command
1929 \def\@adddotafter#1{#1\@addpunct{.}}

\@addspaceafter Add space after the command
1930 \def\@addspaceafter#1{#1\@addpunct{\enspace}}

3.15 Theorems

acmplain The acmplain theorem style

```

1931 \newtheoremstyle{acmplain}%
1932   {.5\baselineskip\@plus.2\baselineskip
1933     \@minus.2\baselineskip}% space above
1934   {.5\baselineskip\@plus.2\baselineskip
1935     \@minus.2\baselineskip}% Space below
1936   {\itshape}% body font
1937   {\parindent}% indent amount

```



```

1938 {\scshape}% head font
1939 {.}% punctuation after head
1940 {.5em}% spacing after head
1941 {\thmname{#1}\thmnumber{ #2}\thmnote{ (#3)}}% head spec

acmdefinition The acmdefinition theorem style
1942 \newtheoremstyle{acmdefinition}%
1943   {.5\baselineskip\@plus.2\baselineskip
1944     \@minus.2\baselineskip}% space above
1945   {.5\baselineskip\@plus.2\baselineskip
1946     \@minus.2\baselineskip}% Space below
1947   {\normalfont}% body font
1948   {\parindent}% indent amount
1949   {\itshape}% head font
1950   {.}% punctuation after head
1951   {.5em}% spacing after head
1952   {\thmname{#1}\thmnumber{ #2}\thmnote{ \itshape(#3)}}% head spec

The definitions for theorems:
1953 \theoremstyle{acmplain}
1954 \newtheorem{theorem}{Theorem}[section]
1955 \newtheorem{conjecture}[theorem]{Conjecture}
1956 \newtheorem{proposition}[theorem]{Proposition}
1957 \newtheorem{lemma}[theorem]{Lemma}
1958 \newtheorem{corollary}[theorem]{Corollary}
1959 \theoremstyle{acmdefinition}
1960 \newtheorem{example}[theorem]{Example}
1961 \newtheorem{definition}[theorem]{Definition}

proof We want small caps proof name
1962 \renewenvironment{proof}[1][\proofname]{\par
1963   \pushQED{\qed}%
1964   \normalfont \topsep6\p@\@plus6\p@\relax
1965   \trivlist
1966     \item[\indent\hskip\labelsep
1967       \scshape
1968       #1\@addpunct{.}]\ignorespaces
1969 }{%
1970   \popQED\endtrivlist\@endpfalse
1971 }

```

3.16 Conditional typesetting

We use the comment package for conditional typesetting:

```

1972 \if@ACM@screen
1973   \includecomment{screenonly}
1974   \excludecomment{printonly}
1975 \else
1976   \excludecomment{screenonly}

```

```
1977 \includecomment{printonly}
1978 \fi
1979 \if@ACM@anonymous
1980 \excludecomment{anonsuppress}
1981 \else
1982 \includecomment{anonsuppress}
1983 \fi
```

3.17 End of Class

```
1984 \normalsize\normalfont
1985 </class>
```

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Change History

| | | | | | |
|-------|---|----|-------|---|----|
| v1.00 | General: First released version | 18 | v1.05 | General: Added processing doi numbers for acmsiggraph and doi numbers for sigproc.bib | 18 |
| v1.01 | General: Changed hyperref colors in screen mode (closes https://github.com/borisveytsman/acmart/issues/1) | 18 | | Patched \setcitestyle command; closes https://github.com/borisveytsman/acmart/issues/19 | 18 |
| | Defined ACM colors | 18 | v1.06 | \@ACM@badge@skip: Added macro | 40 |
| | Explicitly put draft option (closes https://github.com/borisveytsman/acmart/issues/4) | 20 | | \@ACM@badge@width: Added macro | 40 |
| | Set headheight to 1pc for all formats (closes https://github.com/borisveytsman/acmart/issues/5) | 18 | | \@ACM@title@width: Added macro | 40 |
| v1.02 | General: Added TOPS and TSC (closes https://github.com/borisveytsman/acmart/issues/12) | 18 | | \@mktitle@i: Added processing badges | 52 |
| | Documentation changes (closes https://github.com/borisveytsman/acmart/issues/13) | 18 | | Made generic | 52 |
| v1.03 | \@formatdoi: Added macro | 45 | | \@mktitle@ii: Now this macro is obsolete | 53 |
| | \if@ACM@authorversion: Added macro | 19 | | \@mktitle@iii: Added processing badges | 53 |
| | \maketitle: Added special case of authorversion | 48 | | Made more generic | 53 |
| | General: Added anonsuppress environment | 18 | | \@mktitle@iv: Made more generic | 54 |
| | Added authorversion option (closes https://github.com/borisveytsman/acmart/issues/9) | 18 | | \@printtopmatter: Added processing badges | 50 |
| v1.04 | \acmArticleSeq: Name change by Matthew Fluet | 40 | | \@subtitlefont: Added macro | 52 |
| | \acmDOI: Name change by Matthew Fluet | 40 | | \@titlefont: Added macro | 52 |
| | \acmISBN: Name change by Matthew Fluet | 40 | | \acmBadgeL: Added macro | 41 |
| | General: Updated bibliography for siggraph | 18 | | \acmBadgeR: Added macro | 41 |
| | | | | \if@ACM@badge: Added macro | 40 |
| | | | v1.07 | \maketitle: Corrected a bug with abstract footnotes | 48 |
| | | | | Corrected a bug with permission and footnotes order | 48 |
| | | | v1.08 | @ACM@capfmtWithRuleAbove: Introduced macro | 30 |
| | | | | @ACM@capfmtWithRuleBelow: Introduced macro | 30 |
| | | | | \captionruleoff: Introduced macro | 30 |
| | | | | \captionruleon: Introduced macro | 30 |
| | | | | \if@ACM@captionrule: Introduced macro | 30 |
| | | | | \nocaptionrule: Introduced macro | 30 |
| | | | | General: SIGPLAN reformatting by Matthew Fluet | 18 |
| | | | | Typos corrected (Tobias Pape) | 18 |

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