

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:

- `amscs`, <http://www.ctan.org/pkg/amscs>

¹<http://www.acm.org/>

- *amsfonts*, <http://www.ctan.org/pkg/amsfonts>
- *amsmath*, <http://www.ctan.org/pkg/amsmath>
- *binhex*, <http://www.ctan.org/pkg/binhex>
- *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>
- *latex-tools*, <http://www.ctan.org/pkg/latex-tools>
- *libertine*, <http://www.ctan.org/pkg/libertine>
- *manyfoot*, <http://www.ctan.org/pkg/manyfoot>
- *microtype*, <http://www.ctan.org/pkg/microtype>
- *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>
- *setspace*, <http://www.ctan.org/pkg/setspace>
- *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}
```

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`. In most cases you do not need to set it. See Section 2.10.

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

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 IMWUT, JOCCH, PACMPL, 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

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	true	Whether to use natbib package (see Section 2.10)
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)

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, 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.

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

Abbreviation	Publication
CIE	ACM Computers in Entertainment
CSUR	ACM Computing Surveys
IMWUT	PACM on Interactive, Mobile, Wearable and Ubiquitous Technologies
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
PACMPL	Proceedings of the ACM on Programming Languages
TAAAS	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

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

The commands for specification of authors are highly structured. The reason is, they serve double duty: the authors' information is typeset in the manuscript, *and* is used by the metadata extraction tools for indexing and cataloguing. Therefore it is very important to follow the guidelines exactly.

`\author` The basic commands are `\author`, `\orcid` (for the researchers registered with ORCID, <http://www.orcid.org/>), `\affiliation` and `\email`. In the simplest case you enter them in this order:

`\orcid`

`\affiliation`

`\email`

```

\author{...}
\orcid{...}
\affiliation{...}
\email{...}

```

Do *not* use \LaTeX `\and` macro! Each author deserves his or her own `\author` command.

Note that some formats do not typeset e-mails of ORCID identifiers. Do not worry: metadata tools will get them.

Sometimes an author has several affiliations. In this case the `\affiliation` command should be repeated:

```

\author{...}
\orcid{...}
\affiliation{...}
\affiliation{...}
\email{...}

```

Similarly you can repeat `\email` command.

You may have several authors with the same affiliation, different affiliations or overlapping affiliations (author A_1 is affiliated with institutions I_1 and I_2 , while author A_2 is affiliated with I_2 only, and author A_3 is affiliated with I_1 and I_3 , ...). The recommended solution is to put the `\affiliation` commands after each author, possibly repeating them:

```

\author{...}
\orcid{...}
\affiliation{...}
\affiliation{...}
\email{...}
\author{...}
\orcid{...}
\affiliation{...}
\email{...}
\author{...}
\orcid{...}
\affiliation{...}
\affiliation{...}
\email{...}

```

In some cases when several authors share the same affiliation you may try to save the space using the format

```
\author{...}
\email{...}
\author{...}
\email{...}
\affiliation{...}
```

However, this format is not generally recommended.

<pre>\position \institution \department \streetaddress \city \state \postcode \country</pre>	<p>The <code>\affiliation</code> command is further structured to interact with the metadata extraction tools. Inside the this command you should use <code>\position</code>, <code>\institution</code>, <code>\department</code>, <code>\city</code>, <code>\streetaddress</code>, <code>\state</code>, <code>\postcode</code> and <code>\country</code> macros to indicate the corresponding parts of the affiliation. Note that in some cases (for example, journals) these parts are not printed in the resulting copy, but they <i>are</i> necessary since they are used by the XML metadata extraction programs. Do <i>not</i> put commas or <code>\\</code> between the elements of <code>\affiliation</code>: they will be provided automatically.</p> <p>An example of the author block:</p>
--	---

```
\author{A. U. Thor}
\orcid{1234-4564-1234-4565}
\affiliation{%
  \institution{University of New South Wales}
  \department{School of Biomedical Engineering}
  \streetaddress{Samuels Building (F25), Kensington Campus}
  \city{Sydney}
  \state{NSW}
  \postcode{2052}
  \country{Australia}}
\email{author@nsw.au.edu}
\author{A. N. Other}
\affiliation{%
  \institution{University of New South Wales}
  \city{Sydney}
  \state{NSW}
  \country{Australia}}
\author{C. O. Respondent}
\orcid{1234-4565-4564-1234}
\affiliation{%
  \institution{University of Pennsylvania}
  \city{Philadelphia}
  \state{PA}
  \country{USA}}
\affiliation{%
  \institution{University of New South Wales}
  \city{Sydney}
  \state{NSW}
  \country{Australia}}
```

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 \TeX), 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.

`\acmBadgerR` 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: `\acmBadgerR[<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

```
\acmBadgerR[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
`\keywords` 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
`\ccsdesc` 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}
\ccsdesc[300]{Computer systems organization~Redundancy}
\ccsdesc[100]{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

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.

the special form of the copyright statement for this case. Note that you still need the `\setcopyright` command and (optionally) `\copyrightyear` command to tell \TeX 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.

<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{printacmref=false, printccs=true, printfolios=true} </pre>
<code>\received</code>	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

Table 5: Settings for `\settopmatter` command

Parameter	Values	Meaning
<code>printccs</code>	true/false	Whether to print CCS categories
<code>printacmref</code>	true/false	Whether to print ACM bibliographic entry
<code>printfolios</code>	true/false	Whether to print page numbers (folios)

```
\received{February 2007}
\received[revised]{March 2009}
\received[accepted]{June 2009}
```

`\maketitle` The macro `\maketitle` must be the last command in the top matter group: i.e., it must follow the commands defined in this section.

`\shortauthors` *After* the command `\maketitle` the macro `\shortauthors` 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.,

```
\maketitle
\renewcommand{\shortauthors}{Zhou et. al.}
```

2.4 Algorithms

There now several good packages for typesetting algorithms [3, 4, 5], 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 types and adds several new ones. In total there are follwing 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 [6] 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

Tables and figures (including margin tables and margin figures) are by default centered. However, in some cases (for example, when you use several subimages per figure) you may need to override this decision. A good way to do so is to put the contents into a `\minipage` of the width `\columnwidth`.

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}
```

We use *comment* package for typesetting this code, so `\begin` and `\end` should start at the first positions of the lines of their own (no initial spaces etc.).

2.8 Note about anonymous mode

anonsuppress	When the option <code>anonymous</code> 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
--------------	---

```

\begin{anonsuppress}
  This is the continuation of the previous work by the author
  \cite{prev1, prev2}.
\end{anonsuppress}

```

As for `printonly` and `screenonly` environments, `\begin{anonsuppress}` and `\end{anonsuppress}` should start the line of their own (no leading or trailing spaces).

2.9 Acknowledgments

The traditional “Acknowledgments” section is conventionally used to thank persons and granting agencies for their help and support. However, there are several important considerations about this section.

First, in the anonymous mode this section must be omitted: it gives too much information to the reviewers. Second, the data about the grants is extracted and stored separately by the postprocessing software. ACM classes provide facilities for both these tasks.

`acks` The environment `acks` starts an unnumbered section “Acknowledgments” unless the anonymous mode is chosen. Put all thanks inside this environment.

As for `printonly` and `screenonly` environments, `\begin{acks}` and `\end{acks}` should start the line of their own (no leading or trailing spaces).

`\grantsponsor` All the financial support *must* be listed using the commands `\grantsponsor` and
`\grantnum` `\grantnum`. These commands tell the postprocessing software about the granting organization and the grant. The format of the command is the following:

```

\grantsponsor{\<sponsorID>}{\<name>}{\<url>}
\grantnum[\<url>]{\<sponsorID>}{\<number>}.

```

Here `{\<sponsorID>}` is the unique ID used to match grants to sponsors, `{\<name>}` is the name of the sponsor, `{\<url>}` is its URL, and `{\<number>}` is the grant number. The `{\<sponsorID>}` of the `\grantnum` command must correspond to `\sponsorID` of a `\grantsponsor` command. Some awards have their own web pages, which you can include using the optional argument of `\grantnum` command.

Example:

```

\begin{acks}
  The authors would like to thank Dr. Yuhua Li for providing the
  matlab code of the \textit{BEPS} method.

  The authors would also like to thank the anonymous referees for
  their valuable comments and helpful suggestions. The work is
  supported by the \grantsponsor{GS501100001809}{National Natural
  Science Foundation of
  China}{http://dx.doi.org/10.13039/501100001809} under Grant
  No.:~\grantnum{GS501100001809}{61273304}
  and~\grantnum[http://www.nnsf.cn/youngscientsts]{GS501100001809}{Young
  Scientists' Support Program}.
\end{acks}

```

2.10 Bibliography

ACM uses *natbib* package for formatting of referencing and the style `ACM-Reference-Format.bst` for Bib_{TEX} processing. You may disable loading of *natbib* by using the option `natbib=false` in `\documentclass`. However, it is not recommended, as well as the use of Bib_{TEX} styles other than `ACM-Reference-Format.bst`, and may delay the processing of the manuscript.

`\citestyle` If you use *natbib*, you can select one of two predefined citation styles: the author-year format `acmauthoryear` or the numeric format `acmnumeric` using the command `\citestyle`, for example,

```
\citestyle{acmauthoryear}
```

Note that numeric citations are the default mode for most formats.

`\setcitestyle` You may further customize *natbib* using `\setcitestyle` command, for example,

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

If you use *natbib*, then commands like `\citep` and `\citeauthor` are automatically supported.

There are several customized Bib_{TEX} entries and fields in ACM style `ACM-Reference-Format.bst` you may want to be aware of.

The style supports fields `doi` and `url`, for example,

```
doi = "10.1145/1188913.1188915",  
url = "http://ccrma.stanford.edu/~jos/bayes/bayes.pdf",
```

The style supports arXiv recommended fields `eprint` and (optionally) `primaryclass`, for example,

```
eprint      = "960935712",  
primaryclass = "cs",
```

See the examples at <http://arxiv.org/hypertex/bibstyles/>.

There are special entries online and game for Web pages and games, for example,

```
@online{Thornburg01,  
  author = "Harry Thornburg",  
  year = "2001",  
  title = "Introduction to Bayesian Statistics",  
  url = "http://ccrma.stanford.edu/~jos/bayes/bayes.html",  
  month = mar,  
  lastaccessed = "March 2, 2005",  
}
```

For these entries you can use the `lastaccessed` field to add the access date to the URL.

There are two ways to enter video and audio sources in the bibliography corresponding to two different possibilities. For standalone sources available on WWW you can use an online entry, setting there `howpublished` field, for example,

```
@online{Obama08,
  author = "Barack Obama",
  year   = "2008",
  title  = "A more perfect union",
  howpublished = "Video",
  day    = "5",
  url    = "http://video.google.com/videoplay?docid=6528042696351994555",
  month  = mar,
  lastaccessed = "March 21, 2008",
}
```

For the sources available as attachments to conference proceedings and similar documents, you can use the usual `inproceedings` entry, again setting the `howpublished` field:

```
@Inproceedings{Novak03,
  author = "Dave Novak",
  title = "Solder man",
  booktitle = {ACM SIGGRAPH 2003 Video Review on Animation theater
    Program},
  year = "2003",
  publisher = "ACM Press",
  address = "New York, NY",
  pages = "4",
  month = "March 21, 2008",
  doi = "99.9999/woot07-S422",
  howpublished = "Video"
}
```

Sometimes you need to cite a complete issue of a journal. The entry `periodical` is intended for this:

```
@periodical{JCohen96,
  key = "Cohen",
  editor = "Jacques Cohen",
  title = "Special issue: Digital Libraries",
  journal = CACM,
  volume = "39",
  number = "11",
  month = nov,
  year = "1996",
}
```

2.11 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 [7]: ACMBBlue, ACMYellow, ACMOrange, ACMRed, ACMLightBlue, ACMGreen, ACMPurple, ACMDarkBlue. You can use them in the color assignments.

2.12 Other notable packages and typographic remarks

Several other packages are recommended for specialized tasks.

The package *subcaption* [8] is recommended for complex figures with several subplots or subfigures that require separate subcaptioning. The packages *nomencl* [9] and *glossaries* [10] can be used for the automatic creation of the lists of symbols and concepts used.

By default `acmart` prevents all widows and orphans (i.e. lonely lines at the beginning and the end of the page) and hyphenation at the end of the page. This is done by rather strict settings

```
\widowpenalty=10000
\clubpenalty=10000
\brokenpenalty=10000
```

However, this may lead to frustrating results when the authors must obey a page limit. Setting these penalties to smaller values may help if you absolutely need to.

Another problem might be the too strict line breaking rules. Again, a strategically placed `\sloppy` command or putting the problematic paragraph inside `sloppypar` environment might help—but beware the results might be, well, sloppy.

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 [2016/11/16 v1.24 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@override Whether to override the format decision about natbib
68 \newif\if@ACM@natbib@override
69 \@ACM@natbib@overridefalse

\if@ACM@natbib Whether we use natbib mode
70 \define@boolkey+{acmart.cls}[@ACM@]{natbib}[true]{%
71   \@ACM@natbib@override=true
72   \if@ACM@natbib
73     \PackageInfo{\@classname}{Explicitly selecting natbib mode}%

```

```

74 \else
75 \PackageInfo{\@classname}{Explicitly deselecting natbib mode}%
76 \fi}{\PackageError{\@classname}{Option natbib can be either true or
77 false}}

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

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

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

```

3.3 Setting switches

```

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

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

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

Setting up switches
98 \ifnum\ACM@format@nr=0\relax
99 \@ACM@manuscripttrue
100 \else
101 \@ACM@manuscriptfalse
102 \fi
103 \@ACM@sigchiamodefalse
104 \ifcase\ACM@format@nr
105 \relax % manuscript
106 \@ACM@journaltrue

```



```

107 \or % acmsmall
108   \ACM@journaltrue
109 \or % acmlarge
110   \ACM@journaltrue
111 \or % acmtog
112   \ACM@journaltrue
113 \or % sigconf
114   \ACM@journalfalse
115 \or % siggraph
116   \ACM@journalfalse
117 \or % sigplan
118   \ACM@journalfalse
119 \or % sigchi
120   \ACM@journalfalse
121 \or % sigchi-a
122   \ACM@journalfalse
123   \ACM@sigchiamodetrue
124 \fi

```

A format sets up `\if@ACM@natbib` only if `\ACM@natbib@override` is false (i.e. user did *not* override format's selection):

```

125 \if@ACM@natbib@override\else
126   \ACM@natbibtrue
127 \fi

```

3.4 Loading base class and package

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

```

128 \ifx\ACM@fontsize\@empty
129   \ifcase\ACM@format@nr
130     \relax % manuscript
131     \def\ACM@fontsize{9pt}%
132   \or % acmsmall
133     \def\ACM@fontsize{10pt}%
134   \or % acmlarge
135     \def\ACM@fontsize{10pt}%
136   \or % acmtog
137     \def\ACM@fontsize{9pt}%
138   \or % sigconf
139     \def\ACM@fontsize{9pt}%
140   \or % siggraph
141     \def\ACM@fontsize{9pt}%
142   \or % sigplan
143     \def\ACM@fontsize{9pt}%
144   \or % sigchi
145     \def\ACM@fontsize{10pt}%
146   \or % sigchi-a
147     \def\ACM@fontsize{10pt}%
148   \fi
149 \fi

```

```

150 \ClassInfo{\@classname}{Using fontsize \ACM@fontsize}
151 \LoadClass[\ACM@fontsize, reqno]{amsart}
152 \RequirePackage{microtype}

```

We need totpages package to calculate the number of pages

```

153 \RequirePackage{totpages}

```

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

```

154 \RequirePackage{environ}

```

We use setspace for doublespacing

```

155 \if@ACM@manuscript
156 \RequirePackage{setspace}
157 \onehalfspacing
158 \fi

```

Citations. We patch \setcitestyle to allow, e.g., \setcitestyle{sort} and \setcitestyle{nosort}. We patch \citestyle to warn about undefined citation styles.

```

159 \if@ACM@natbib
160 \RequirePackage{natbib}
161 \renewcommand{\bibsection}{%
162   \section*{\refname}%
163   \phantomsection\addcontentsline{toc}{section}{\refname}%
164 }
165 \renewcommand{\bibfont}{\bibliofont}
166 \renewcommand\setcitestyle[1]{
167   \@for\@tempa:=#1\do
168   {\def\@tempb{round}\ifx\@tempa\@tempb
169     \renewcommand\NAT@open{(\}\renewcommand\NAT@close{)}\fi
170   \def\@tempb{square}\ifx\@tempa\@tempb
171     \renewcommand\NAT@open{[\}\renewcommand\NAT@close{]}\fi
172   \def\@tempb{angle}\ifx\@tempa\@tempb
173     \renewcommand\NAT@open{$<$}\renewcommand\NAT@close{$>$}\fi
174   \def\@tempb{curly}\ifx\@tempa\@tempb
175     \renewcommand\NAT@open{\{\}\renewcommand\NAT@close{\}}\fi
176   \def\@tempb{semicolon}\ifx\@tempa\@tempb
177     \renewcommand\NAT@sep{;}\fi
178   \def\@tempb{colon}\ifx\@tempa\@tempb
179     \renewcommand\NAT@sep{:}\fi
180   \def\@tempb{comma}\ifx\@tempa\@tempb
181     \renewcommand\NAT@sep{,}\fi
182   \def\@tempb{authoryear}\ifx\@tempa\@tempb
183     \NAT@numbersfalse\fi
184   \def\@tempb{numbers}\ifx\@tempa\@tempb
185     \NAT@numberstrue\NAT@superfalse\fi
186   \def\@tempb{super}\ifx\@tempa\@tempb
187     \NAT@numberstrue\NAT@supertrue\fi
188   \def\@tempb{nobibstyle}\ifx\@tempa\@tempb
189     \let\bibstyle=\gobble\fi

```

```

190 \def\@tempb{bibstyle}\ifx\@tempa\@tempb
191 \let\bibstyle=\@citestyle\fi
192 \def\@tempb{sort}\ifx\@tempa\@tempb
193 \def\NAT@sort{\@ne}\fi
194 \def\@tempb{nosort}\ifx\@tempa\@tempb
195 \def\NAT@sort{\@z}\fi
196 \def\@tempb{compress}\ifx\@tempa\@tempb
197 \def\NAT@cmprs{\@ne}\fi
198 \def\@tempb{nocompress}\ifx\@tempa\@tempb
199 \def\NAT@cmprs{\@z}\fi
200 \def\@tempb{sort&compress}\ifx\@tempa\@tempb
201 \def\NAT@sort{\@ne}\def\NAT@cmprs{\@ne}\fi
202 \def\@tempb{mcite}\ifx\@tempa\@tempb
203 \let\NAT@merge\@ne\fi
204 \def\@tempb{merge}\ifx\@tempa\@tempb
205 \ifnum{\NAT@merge<\tw@}{\let\NAT@merge\tw@}\fi
206 \def\@tempb{elide}\ifx\@tempa\@tempb
207 \ifnum{\NAT@merge<\thr@}{\let\NAT@merge\thr@}\fi
208 \def\@tempb{longnamesfirst}\ifx\@tempa\@tempb
209 \NAT@longnamestrue\fi
210 \def\@tempb{nonamebreak}\ifx\@tempa\@tempb
211 \def\NAT@nmfmt#1{\mbox{\NAT@up#1}}\fi
212 \expandafter\NAT@find@eq\@tempa=\relax\@nil
213 \if\@tempc\relax\else
214 \expandafter\NAT@rem@eq\@tempc
215 \def\@tempb{open}\ifx\@tempa\@tempb
216 \xdef\NAT@open{\@tempc}\fi
217 \def\@tempb{close}\ifx\@tempa\@tempb
218 \xdef\NAT@close{\@tempc}\fi
219 \def\@tempb{aysep}\ifx\@tempa\@tempb
220 \xdef\NAT@aysep{\@tempc}\fi
221 \def\@tempb{yysep}\ifx\@tempa\@tempb
222 \xdef\NAT@yrsep{\@tempc}\fi
223 \def\@tempb{notesep}\ifx\@tempa\@tempb
224 \xdef\NAT@cmt{\@tempc}\fi
225 \def\@tempb{citesep}\ifx\@tempa\@tempb
226 \xdef\NAT@sep{\@tempc}\fi
227 \fi
228 }%
229 \NAT@@setcites
230 }
231 \renewcommand\citestyle[1]{%
232 \ifcsname bibstyle@#1\endcsname%
233 \csname bibstyle@#1\endcsname\let\bibstyle\@gobble%
234 \else%
235 \latexerror{Undefined ‘#1’ citestyle}%
236 \fi
237 }%
238 \fi

```

`\bibstyle@acmauthoryear` The default author-year format:

```

239 \newcommand{\bibstyle@acmauthoryear}{%
240   \setcitestyle{%
241     authoryear,%
242     open={()},close={}},citesep={;},%
243     aysep={},yysep={},,%
244     notesep={, }}}

```

`\bibstyle@acmnumeric` The default numeric format:

```

245 \newcommand{\bibstyle@acmnumeric}{%
246   \setcitestyle{%
247     numbers,sort&compress,%
248     open={[]},close={[]},citesep={,},%
249     notesep={, }}}

```

The default is numeric:

```

250 \citestyle{acmnumeric}

```

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:

```

251 \def\@startsection#1#2#3#4#5#6{%
252   \ifnoskipsec \leavevmode \fi
253   \par
254   \@tempskipa #4\relax
255   \@afterindenttrue
256   \ifdim \@tempskipa <\z@
257     \@tempskipa -\@tempskipa \@afterindentfalse
258   \fi
259   \if@nobreak
260     \everypar{%
261       \else
262         \addpenalty\@secpenalty\addvspace\@tempskipa
263       \fi
264       \@ifstar
265         {\@ssect{#3}{#4}{#5}{#6}}%
266         {\@dblarg{\@sect{#1}{#2}{#3}{#4}{#5}{#6}}}%
267 \def\@sect#1#2#3#4#5#6[#7]#8{%
268   \ifnum #2>\c@secnumdepth
269     \let\@svsec\@empty
270   \else
271     \refstepcounter{#1}%
272     \protected@edef\@svsec{\@secntformat{#1}\relax}%
273   \fi
274   \@tempskipa #5\relax
275   \ifdim \@tempskipa>\z@
276     \begingroup
277       #6{%
278         \@hangfrom{\hskip #3\relax\@svsec}%
279         \interlinepenalty \@M #8\@par}%

```

```

280 \endgroup
281 \csname #1mark\endcsname{#7}%
282 \addcontentsline{toc}{#1}{%
283   \ifnum #2>\c@secnumdepth \else
284     \protect\numberline{\csname the#1\endcsname}%
285   \fi
286   #7}%
287 \else
288   \def\@svsechd{%
289     #6{\hskip #3\relax
290       \@svsec #8}%
291     \csname #1mark\endcsname{#7}%
292     \addcontentsline{toc}{#1}{%
293       \ifnum #2>\c@secnumdepth \else
294         \protect\numberline{\csname the#1\endcsname}%
295       \fi
296       #7}}%
297 \fi
298 \@xsect{#5}}
299 \def\@xsect#1{%
300   \@tempkipa #1\relax
301   \ifdim \@tempkipa>\z@
302     \par \nobreak
303     \vskip \@tempkipa
304     \afterheading
305   \else
306     \nobreakfalse
307     \global\@noskipsectrue
308     \everypar{%
309       \if@noskipsec
310         \global\@noskipsecfalse
311         {\setbox\z@\lastbox}%
312         \clubpenalty\@M
313         \begingroup \@svsechd \endgroup
314         \unskip
315         \@tempkipa #1\relax
316         \hskip -\@tempkipa
317       \else
318         \clubpenalty \@clubpenalty
319         \everypar{}%
320       \fi}%
321 \fi
322 \ignorespaces}
323 \def\@seccntformat#1{\csname the#1\endcsname\quad}
324 \def\@essect#1#2#3#4#5{%
325   \@tempkipa #3\relax
326   \ifdim \@tempkipa>\z@
327     \begingroup
328       #4{%
329         \@hangfrom{\hskip #1}%

```

```

330         \interlinepenalty \@M #5\@par}%
331     \endgroup
332 \else
333     \def\@svsechd{#4{\hskip #1\relax #5}}%
334 \fi
335 \@xsect{#3}}

And hyperref
336 \let\@footnotemark@nolink\@footnotemark
337 \let\@footnotetext@nolink\@footnotetext
338 \RequirePackage[bookmarksnumbered]{hyperref}
339 \urlstyle{rm}
340 \ifcase\ACM@format@nr
341 \relax % manuscript
342 \or % acmsmall
343 \or % acmlarge
344 \or % acmtog
345 \or % sigconf
346 \or % siggraph
347 \or % sigplan
348 \urlstyle{sf}
349 \or % sigchi
350 \or % sigchi-a
351 \urlstyle{sf}
352 \fi
353 \if@ACM@screen
354     \hypersetup{colorlinks,
355         linkcolor=ACMRed,
356         citecolor=ACMPurple,
357         urlcolor=ACMDarkBlue,
358         filecolor=ACMDarkBlue}
359 \else
360     \hypersetup{hidelinks}
361 \fi

Bibliography mangling.
362 \if@ACM@natbib
363     \let\citeN\cite
364     \let\cite\citep
365     \let\citeANP\citeauthor
366     \let\citeNN\citeyearpar
367     \let\citeyearNP\citeyear
368     \let\citeyear\citeyearpar
369     \let\citeNP\citealt
370     \def\shortcite#1{\citeyear{#1}}
371     \DeclareRobustCommand\citeA
372         {\begingroup\NAT@swafalse
373             \let\NAT@ctype\@ne\NAT@partrue\NAT@fullfalse\NAT@open\NAT@citetp}%
374     \providecommand\newblock{}%
375 \else
376     \providecommand\citename[1]{#1}

```

```
377 \fi
```

`\bibliographystyle` Amsart redefines `\bibliographystyle` since it prefers AMS bibliography. We turn it back to \LaTeX definition:

```
378 \def\bibliographystyle#1{%
379   \ifx\@begindocumenthook\@undefined\else
380     \expandafter\AtBeginDocument
381     \fi
382     {\if@filesw
383       \immediate\write\@auxout{\string\bibstyle{#1}}%
384       \fi}}
```

Graphics and color

```
385 \RequirePackage{graphicx, xcolor}
```

We define ACM colors according to [7]:

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

3.5 Paper size and paragraphing

We use geometry for dimensions

```
394 \RequirePackage{geometry}
395 \ifcase\ACM@format@nr
396 \relax % manuscript
397   \geometry{letterpaper,head=1pc}%
398 \or % acmsmall
399   \geometry{twoside=true,
400     includeheadfoot, head=1pc, foot=2pc,
401     paperwidth=6.75in, paperheight=10in,
402     top=58pt, bottom=44pt, inner=46pt, outer=46pt
403   }%
404 \or % acmlarge
405   \geometry{twoside=true, head=1pc, foot=2pc,
406     paperwidth=8.5in, paperheight=11in,
407     includeheadfoot,
408     top=78pt, bottom=114pt, inner=81pt, outer=81pt
409   }%
410 \or % acmtog
411   \geometry{twoside=true, head=1pc, foot=2pc,
412     paperwidth=8.5in, paperheight=11in,
413     includeheadfoot, columnsep=24pt,
414     top=52pt, bottom=75pt, inner=52pt, outer=52pt
```

```

415     }%
416 \or % sigconf
417   \geometry{twoside=true, head=1pc,
418     paperwidth=8.5in, paperheight=11in,
419     includeheadfoot, columnsep=2pc,
420     top=57pt, bottom=73pt, inner=54pt, outer=54pt
421   }%
422 \or % siggraph
423   \geometry{twoside=true, head=1pc,
424     paperwidth=8.5in, paperheight=11in,
425     includeheadfoot, columnsep=2pc,
426     top=57pt, bottom=73pt, inner=54pt, outer=54pt
427   }%
428 \or % sigplan
429   \geometry{twoside=true, head=1pc,
430     paperwidth=8.5in, paperheight=11in,
431     includeheadfoot=false, columnsep=2pc,
432     top=1in, bottom=1in, inner=0.75in, outer=0.75in
433   }%
434 \or % sigchi
435   \geometry{twoside=true, head=1pc,
436     paperwidth=8.5in, paperheight=11in,
437     includeheadfoot, columnsep=2pc,
438     top=66pt, bottom=73pt, inner=54pt, outer=54pt
439   }%
440 \or % sigchi-a
441   \geometry{twoside=false, head=1pc,
442     paperwidth=11in, paperheight=8.5in,
443     includeheadfoot, marginparsep=72pt,
444     marginparwidth=170pt, columnsep=20pt,
445     top=72pt, bottom=72pt, left=314pt, right=72pt
446   }%
447   \@parswitchfalse
448   \reversemarginpar
449 \fi

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

```


463 \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.

We use *manyfoot* for layered footnotes instead.

\copyrightpermissionfootnoterule This is the footnote rule that separates bibstrip from the rest of the paper. It is a full width rule.

```
464 \def\copyrightpermissionfootnoterule{\kern-3\p@
465   \hrule \@width \columnwidth \kern 2.6\p@}

466 \RequirePackage{manyfoot}
467 \SelectFootnoteRule[2]{copyrightpermission}
468 \DeclareNewFootnote{copyrightpermission}
```

\footnoterule Tschichold’s rules:

```
469 \def\footnoterule{\kern-3\p@
470   \hrule \@width 4pc \kern 2.6\p@}
```

\endminipage We do not use footnote rules in minipages

```
471 \def\endminipage{%
472   \par
473   \unskip
474   \ifvoid\@mpfootins\else
475     \vskip\skip\@mpfootins
476     \normalcolor
477     \unvbox\@mpfootins
478   \fi
479   \@minipagefalse %% added 24 May 89
480   \color@endgroup
481   \egroup
482   \expandafter\@iiiparbox\@mpargs{\unvbox\@tempboxa}}
```

\@makefnmark We do note 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#1
493     \rule{z@footnotesep}{\ignorespaces#1}\@finalstrut\strutbox}%
}
```

```

494 \color@endgroup}}%
495 \fi

\@mpfootnotetext We want the footnotes in minipages centered:
496 \long\def\@mpfootnotetext#1{%
497 \global\setbox\@mpfootins\vbox{%
498 \unvbox\@mpfootins
499 \reset@font\footnotesize
500 \hsize\columnwidth
501 \@parboxrestore
502 \protected@edef\@currentlabel
503 {\csname p@mpfootnote\endcsname\@thefnmark}%
504 \color@begingroup\centering
505 \makefnmark{%
506 \rule\z@{\footnotesep\ignorespaces#1\@finalstrut\strutbox}%
507 \color@endgroup}}

\@makefnmark AMS classes use a buggy definition of \makefnmark. We revert to the standard one.
508 \def\@makefnmark{\hbox{\@textsuperscript{\normalfont\@thefnmark}}}
```

3.6 Fonts

```

\if@ACM@newfonts Whether we load the new fonts
509 \newif\if@ACM@newfonts
510 \@ACM@newfontstrue
511 \IfFileExists{libertine.sty}{\ClassWarning{\@classname}{You do not
512 have libertine package installed. Please upgrade your
513 TeX}\@ACM@newfontsfalse}
514 \IfFileExists{zi4.sty}{\ClassWarning{\@classname}{You do not
515 have zi4 package installed. Please upgrade your TeX}\@ACM@newfontsfalse}
516 \IfFileExists{newtxmath.sty}{\ClassWarning{\@classname}{You do not
517 have newtxmath package installed. Please upgrade your
518 TeX}\@ACM@newfontsfalse}

We use Times throughout.
519 \if@ACM@newfonts
520 \RequirePackage[tt=false]{libertine}
521 \RequirePackage[varqu]{zi4}
522 \RequirePackage[libertine]{newtxmath}
523 \else
524 \RequirePackage{textcomp}
525 \fi

The SIGCHI extended abstracts are sans serif:
526 \if@ACM@sigchiamode
527 \renewcommand{\familydefault}{\sfdefault}
528 \fi
```

3.7 Floats

We use caption package

```

529 \RequirePackage{caption, float}
530 \captionsetup[table]{position=top}
531 \if@ACM@journal
532   \captionsetup{labelfont={sf, small},
533     textfont={sf, small}, margin=\z@}
534   \captionsetup[figure]{name={Fig.}}
535 \else
536   \captionsetup{labelfont={bf},
537     textfont={bf}, labelsep=colon, margin=\z@}
538   \ifcase\ACM@format@nr
539     \relax % manuscript
540     \or % acmsmall
541     \or % acmlarge
542     \or % acmtog
543     \or % sigconf
544     \or % siggraph
545     \captionsetup{textfont={it}}
546     \or % sigplan
547     \captionsetup{labelfont={bf},
548       textfont={normalfont}, labelsep=period, margin=\z@}
549     \or % sigchi
550     \captionsetup[figure]{labelfont={bf, small},
551       textfont={bf, small}}
552     \or % sigchi-a
553     \captionsetup[figure]{labelfont={bf, small},
554       textfont={bf, small}}
555   \fi
556 \fi

```

sidebar The sidebar environment:

```

557 \newfloat{sidebar}{}{sbar}
558 \floatname{sidebar}{Sidebar}
559 \renewenvironment{sidebar}{}{\Collect@Body\@sidebar}{}

```

\@sidebar The processing of the saved text

```

560 \long\def\@sidebar#1{\bgroup\captionsetup{type=sidebar}%
561   \marginpar{\small#1}\egroup}

```

marginfigure The marginfigure environment:

```

562 \newenvironment{marginfigure}{}{\Collect@Body\@marginfigure}{}

```

\@marginfigure The processing of the saved text

```

563 \long\def\@marginfigure#1{\bgroup\captionsetup{type=figure}%
564   \marginpar{\centering\small#1}\egroup}

```

marginatable The marginatable environment:

```

565 \newenvironment{marginatable}{}{\Collect@Body\@marginatable}{}

```

`\@margintable` The processing of the saved text

```
566 \long\def\@margintable#1{\bgroup\captionsetup{type=table}%  
567 \marginpar{\centering\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

```
568 \newdimen\fulltextwidth  
569 \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)

```
570 \if@ACM@sigchiamode  
571 \def\@dblfloat{\bgroup\columnwidth=\fulltextwidth  
572 \let\endfloatbox\endwidefloatbox  
573 \def\@fpsaddddefault{\def\@fps{tp}}%  
574 \@float}  
575 \fi
```

`\enddblfloat` And the end. Just adding a `\bgroup`.

```
576 \if@ACM@sigchiamode  
577 \def\enddblfloat{%  
578 \endfloat\egroup}  
579 \fi
```

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

```
580 \def\@endwidefloatbox{%  
581 \par\vskip\z@skip  
582 \@minipagefalse  
583 \outer@nobreak  
584 \egroup  
585 \color@endbox  
586 \global\setbox\@currbox=\vbox{\moveleft  
587 \dimexpr(\fulltextwidth-\textwidth)\box\@currbox}%  
588 \wd\@currbox=\textwidth  
589 }
```

3.8 Lists

```
590 \ifcase\ACM@format@nr  
591 \relax % manuscript  
592 \or % acmsmall  
593 \or % acmlarge  
594 \or % acmtog  
595 \or % sigconf  
596 \or % siggraph  
597 \or % sigplan  
598 \def\labelenumi{\theenumi.}
```

```

599 \def\labelenumii{\theenumii.}
600 \def\labelenumiii{\theenumiii.}
601 \def\labelenumiv{\theenumiv.}
602 \or % sigchi
603 \or % sigchi-a
604 \fi

\descriptionlabel We do not use default colon as \amsart does:
605 \renewcommand{\descriptionlabel}[1]{\hspace\labelsep \upshape\bfseries #1}

\description AMS uses additional indent of 6pt. Frank recommends dropping it.
606 \renewenvironment{description}{\list{}{%
607   \itemindent-12\p@
608   \labelwidth\z@ \let\makelabel\descriptionlabel}%
609 }{
610   \endlist
611 }
612 \let\enddescription=\endlist % for efficiency

```

3.9 Top matter data

We use keyval interface to define journal title and relevant information

```

613 \define@choicekey*+{ACM}{acmJournal}[\@journalCode\@journalCode@nr]{%
614   CIE,%
615   CSUR,%
616   IMWUT,%
617   JACM,%
618   JDIQ,%
619   JEA,%
620   JERIC,%
621   JETC,%
622   JOCCH,%
623   PACMPL,%
624   TAAS,%
625   TACCESS,%
626   TACO,%
627   TALG,%
628   TALLIP,%
629   TAP,%
630   TCPS,%
631   TEAC,%
632   TECS,%
633   TIIS,%
634   TISSEC,%
635   TIST,%
636   TKDD,%
637   TMIS,%
638   TOCE,%
639   TOCHI,%

```

```

640 TOCL,%
641 TOCS,%
642 TOCT,%
643 TODAES,%
644 TODS,%
645 TOG,%
646 TOIS,%
647 TOIT,%
648 TOMACS,%
649 TOMM,%
650 TOMPECS,%
651 TOMS,%
652 TOPC,%
653 TOPS,%
654 TOPLAS,%
655 TOS,%
656 TOSEM,%
657 TOSN,%
658 TRETs,%
659 TSAS,%
660 TSC,%
661 TSLP,%
662 TWEB%
663 }{%
664 \ifcase\@journalCode@nr
665 \relax % CIE
666 \def\@journalName{ACM Computers in Entertainment}%
667 \def\@journalNameShort{ACM Comput. Entertain.}%
668 \def\@permissionCodeOne{1544-3574}%
669 \or % CSUR
670 \def\@journalName{ACM Computing Surveys}%
671 \def\@journalNameShort{ACM Comput. Surv.}%
672 \def\@permissionCodeOne{0360-0300}%
673 \or % IMWUT
674 \def\@journalName{PACM on Interactive, Mobile, Wearable and
675 Ubiquitous Technologies}%
676 \def\@journalNameShort{PACM Interact. Mob. Wearable Ubiquitous Technol.}%
677 \def\@permissionCodeOne{2474-9567}%
678 \or % JACM
679 \def\@journalName{Journal of the ACM}%
680 \def\@journalNameShort{J. ACM}%
681 \def\@permissionCodeOne{0004-5411}%
682 \or % JDIQ
683 \def\@journalName{ACM Journal of Data and Information Quality}%
684 \def\@journalNameShort{ACM J. Data Inform. Quality}%
685 \def\@permissionCodeOne{1936-1955}%
686 \or % JEA
687 \def\@journalName{ACM Journal of Experimental Algorithmics}%
688 \def\@journalNameShort{ACM J. Exp. Algor.}%
689 \def\@permissionCodeOne{1084-6654}%

```

```

690 \or % JERIC
691 \def\@journalName{ACM Journal of Educational Resources in Computing}%
692 \def\@journalNameShort{ACM J. Edu. Resources in Comput.}%
693 \def\@permissionCodeOne{1073-0516}%
694 \or % JETC
695 \def\@journalName{ACM Journal on Emerging Technologies in Computing Systems}%
696 \def\@journalNameShort{ACM J. Emerg. Technol. Comput. Syst.}%
697 \def\@permissionCodeOne{1550-4832}%
698 \or % JOCCH
699 \def\@journalName{ACM Journal on Computing and Cultural Heritage}%
700 \def\@journalName{ACM J. Comput. Cult. Herit.}%
701 \or % PACMPL
702 \def\@journalName{Proceedings of the ACM on Programming Languages}%
703 \def\@journalName{Proc. ACM Program. Lang.}%
704 \or % TAAS
705 \def\@journalName{ACM Transactions on Autonomous and Adaptive Systems}%
706 \def\@journalNameShort{ACM Trans. Autonom. Adapt. Syst.}%
707 \def\@permissionCodeOne{1556-4665}%
708 \or % TACCESS
709 \def\@journalName{ACM Transactions on Accessible Computing}%
710 \def\@journalNameShort{ACM Trans. Access. Comput.}%
711 \def\@permissionCodeOne{1936-7228}%
712 \or % TACO
713 \def\@journalName{ACM Transactions on Architecture and Code Optimization}%
714 \or % TALG
715 \def\@journalName{ACM Transactions on Algorithms}%
716 \def\@journalNameShort{ACM Trans. Algor.}%
717 \def\@permissionCodeOne{1549-6325}%
718 \or % TALLIP
719 \def\@journalName{ACM Transactions on Asian and Low-Resource Language Information Processing}%
720 \def\@journalNameShort{ACM Trans. Asian Low-Resour. Lang. Inf. Process.}%
721 \def\@permissionCodeOne{2375-4699}%
722 \or % TAP
723 \def\@journalName{ACM Transactions on Applied Perception}%
724 \or % TCPS
725 \def\@journalName{ACM Transactions on Cyber-Physical Systems}%
726 \or % TEAC
727 \def\@journalName{ACM Transactions on Economics and Computation}%
728 \or % TECS
729 \def\@journalName{ACM Transactions on Embedded Computing Systems}%
730 \def\@journalNameShort{ACM Trans. Embedd. Comput. Syst.}%
731 \def\@permissionCodeOne{1539-9087}%
732 \or % TIIS
733 \def\@journalName{ACM Transactions on Interactive Intelligent Systems}%
734 \def\@journalNameShort{ACM Trans. Interact. Intell. Syst.}%
735 \def\@permissionCodeOne{2160-6455}%
736 \or % TISSEC
737 \def\@journalName{ACM Transactions on Information and System Security}%
738 \def\@journalNameShort{ACM Trans. Info. Syst. Sec.}%
739 \def\@permissionCodeOne{1094-9224}%

```

```

740 \or % TIST
741 \def\@journalName{ACM Transactions on Intelligent Systems and Technology}%
742 \def\@journalNameShort{ACM Trans. Intell. Syst. Technol.}%
743 \def\@permissionCodeOne{2157-6904}%
744 \or % TKDD
745 \def\@journalName{ACM Transactions on Knowledge Discovery from Data}%
746 \def\@journalNameShort{ACM Trans. Knowl. Discov. Data.}%
747 \def\@permissionCodeOne{1556-4681}%
748 \or % TMIS
749 \def\@journalName{ACM Transactions on Management Information Systems}%
750 \def\@journalNameShort{ACM Trans. Manag. Inform. Syst.}%
751 \def\@permissionCodeOne{2158-656X}%
752 \or % TOCE
753 \def\@journalName{ACM Transactions on Computing Education}%
754 \def\@journalNameShort{ACM Trans. Comput. Educ.}%
755 \def\@permissionCodeOne{1946-6226}%
756 \or % TOCHI
757 \def\@journalName{ACM Transactions on Computer-Human Interaction}%
758 \def\@journalNameShort{ACM Trans. Comput.-Hum. Interact.}%
759 \def\@permissionCodeOne{1073-0516}%
760 \or % TOCL
761 \def\@journalName{ACM Transactions on Computational Logic}%
762 \def\@journalNameShort{ACM Trans. Comput. Logic}%
763 \def\@permissionCodeOne{1529-3785}%
764 \or % TOCS
765 \def\@journalName{ACM Transactions on Computer Systems}%
766 \def\@journalNameShort{ACM Trans. Comput. Syst.}%
767 \def\@permissionCodeOne{0734-2071}%
768 \or % TOCT
769 \def\@journalName{ACM Transactions on Computation Theory}%
770 \def\@journalNameShort{ACM Trans. Comput. Theory}%
771 \def\@permissionCodeOne{1942-3454}%
772 \or % TODAES
773 \def\@journalName{ACM Transactions on Design Automation of Electronic Systems}%
774 \def\@journalNameShort{ACM Trans. Des. Autom. Electron. Syst.}%
775 \def\@permissionCodeOne{1084-4309}%
776 \or % TODS
777 \def\@journalName{ACM Transactions on Database Systems}%
778 \def\@journalNameShort{ACM Trans. Datab. Syst.}%
779 \def\@permissionCodeOne{0362-5915}%
780 \or % TOG
781 \def\@journalName{ACM Transactions on Graphics}%
782 \def\@journalNameShort{ACM Trans. Graph.}%
783 \def\@permissionCodeOne{0730-0301}%
784 \or % TOIS
785 \def\@journalName{ACM Transactions on Information Systems}%
786 \def\@journalName{ACM Transactions on Information Systems}%
787 \def\@permissionCodeOne{1046-8188}%
788 \or % TOIT
789 \def\@journalName{ACM Transactions on Internet Technology}%

```



```

790 \def\@journalNameShort{ACM Trans. Internet Technol.}%
791 \def\@permissionCodeOne{1533-5399}%
792 \or % TOMACS
793 \def\@journalName{ACM Transactions on Modeling and Computer Simulation}%
794 \def\@journalName{ACM Transactions on Modeling and Computer Simulation}%
795 \def\@journalNameShort{ACM Trans. Model. Comput. Simul.}%
796 \or % TOMM
797 \def\@journalName{ACM Transactions on Multimedia Computing, Communications and Applications}%
798 \def\@journalNameShort{ACM Trans. Multimedia Comput. Commun. Appl.}%
799 \def\@permissionCodeOne{1551-6857}%
800 \def\@permissionCodeTwo{0100}%
801 \or % TOMPECS
802 \def\@journalName{ACM Transactions on Modeling and Performance Evaluation of Computing Systems}%
803 \def\@journalNameShort{ACM Trans. Model. Perform. Eval. Comput. Syst.}%
804 \def\@permissionCodeOne{2376-3639}%
805 \or % TOMS
806 \def\@journalName{ACM Transactions on Mathematical Software}%
807 \def\@journalNameShort{ACM Trans. Math. Softw.}%
808 \def\@permissionCodeOne{0098-3500}%
809 \or % TOPC
810 \def\@journalName{ACM Transactions on Parallel Computing}%
811 \def\@journalNameShort{ACM Trans. Parallel Comput.}%
812 \def\@permissionCodeOne{1539-9087}%
813 \or % TOPS
814 \def\@journalName{ACM Transactions on Privacy and Security}%
815 \def\@journalNameShort{ACM Trans. Priv. Sec.}%
816 \def\@permissionCodeOne{2471-2566}%
817 \or % TOPLAS
818 \def\@journalName{ACM Transactions on Programming Languages and Systems}%
819 \def\@journalNameShort{ACM Trans. Program. Lang. Syst.}%
820 \def\@permissionCodeOne{0164-0925}%
821 \or % TOS
822 \def\@journalName{ACM Transactions on Storage}%
823 \def\@journalNameShort{ACM Trans. Storage}%
824 \def\@permissionCodeOne{1553-3077}%
825 \or % TOSEM
826 \def\@journalName{ACM Transactions on Software Engineering and Methodology}%
827 \def\@journalNameShort{ACM Trans. Softw. Eng. Methodol.}%
828 \def\@permissionCodeOne{1049-331X}%
829 \or % TOSN
830 \def\@journalName{ACM Transactions on Sensor Networks}%
831 \def\@journalNameShort{ACM Trans. Sensor Netw.}%
832 \def\@permissionCodeOne{1550-4859}%
833 \or % TRET
834 \def\@journalName{ACM Transactions on Reconfigurable Technology and Systems}%
835 \def\@journalNameShort{ACM Trans. Reconfig. Technol. Syst.}%
836 \def\@permissionCodeOne{1936-7406}%
837 \or % TSAS
838 \def\@journalName{ACM Transactions on Spatial Algorithms and Systems}%
839 \def\@journalNameShort{ACM Trans. Spatial Algorithms Syst.}%

```

```

840 \def\@permissionCodeOne{2374-0353}%
841 \or % TSC
842 \def\@journalName{ACM Transactions on Social Computing}%
843 \def\@journalNameShort{ACM Trans. Soc. Comput.}%
844 \def\@permissionCodeOne{2469-7818}%
845 \or % TSLP
846 \def\@journalName{ACM Transactions on Speech and Language Processing}%
847 \def\@journalNameShort{ACM Trans. Speech Lang. Process.}%
848 \def\@permissionCodeOne{1550-4875}%
849 \or % TWEB
850 \def\@journalName{ACM Transactions on the Web}%
851 \def\@journalNameShort{ACM Trans. Web}%
852 \def\@permissionCodeOne{1559-1131}%
853 \fi
854 \ClassInfo{\@classname}{Using journal code \@journalCode}%
855 }{%
856 \ClassError{\@classname}{Incorrect journal #1}%
857 }%

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

The defaults:
859 \def\@journalCode@nr{0}
860 \def\@journalName{}%
861 \def\@journalNameShort{\@journalName}%
862 \def\@permissionCodeOne{XXXX-XXXX}%
863 \def\@permissionCodeTwo{}%

\acmConference This is the conference command
864 \newcommand\acmConference[4][]{%
865 \gdef\acmConference@shortname{#1}%
866 \gdef\acmConference@name{#2}%
867 \gdef\acmConference@date{#3}%
868 \gdef\acmConference@venue{#4}%
869 \ifx\acmConference@shortname\@empty
870 \gdef\acmConference@shortname{#2}%
871 \fi}
872 \acmConference[Conference'17]{ACM Conference}{July 2017}{Washington,
873 DC, USA}

\subtitle The subtitle macro
874 \def\subtitle#1{\def\@subtitle{#1}}
875 \subtitle{}

\num@authorgroups The total number of “groups”. Each group is several authors with the same affiliations(s)
876 \newcount\num@authorgroups
877 \num@authorgroups=0\relax

```

`\if@insideauthorgroup` Whether we are continuing an author group `@insideauthorgroup` `insideauthorgroup-false`

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

```

878 \newcommand\author[2][{}%
879   \if@insideauthorgroup\else
880     \global\advance\num@authorgroups by 1\relax
881     \global\@insideauthorgrouptrue
882   \fi
883   \ifx\addresses\@empty
884     \if@ACM@anonymous
885       \gdef\addresses{\@author{Anonymous Author(s)}}%
886       \gdef\authors{Anonymous Author(s)}%
887     \else
888       \gdef\addresses{\@author{#2}}%
889       \gdef\authors{#2}%
890     \fi
891   \else
892     \if@ACM@anonymous\else
893       \g@addto@macro\addresses{\and\@author{#2}}%
894       \g@addto@macro\authors{\and#2}%
895     \fi
896   \fi
897   \if@ACM@anonymous
898     \ifx\shortauthors\@empty
899       \gdef\shortauthors{Anon.}%
900     \fi
901   \else
902     \def\@tempa{#1}%
903     \ifx\@tempa\@empty
904       \ifx\shortauthors\@empty
905         \gdef\shortauthors{#2}%
906       \else
907         \g@addto@macro\shortauthors{\and#2}%
908       \fi
909     \else
910       \ifx\shortauthors\@empty
911         \gdef\shortauthors{#1}%
912       \else
913         \g@addto@macro\shortauthors{\and#1}%
914       \fi
915     \fi
916   \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.

```

917 \newcommand{\affiliation}[2][{}%
918   \global\@insideauthorgroupfalse
919   \if@ACM@anonymous\else

```

```

920   \g@addto@macro\addresses{\affiliation{#1}{#2}}%
921   \fi}

\email The macro \email mimics \email from amsart. Agian it has an optional argument we
do not currently need, but keep for the possible future use.
922 \renewcommand{\email}[2][{}]{%
923   \if@ACM@anonymous\else
924     \g@addto@macro\addresses{\email{#1}{#2}}%
925   \fi}

\orcid Right now we do not typeset orcid's gobble

\@titlenotes The titlenotes
926 \def\@titlenotes{}

\titlenote Adding note to the title
927 \def\titlenote#1{%
928   \g@addto@macro\@title{\footnotemark}%
929   \if@ACM@anonymous
930     \g@addto@macro\@titlenotes{%
931       \stepcounter{footnote}\footnotetext{Title note}}%
932   \else
933     \g@addto@macro\@titlenotes{\stepcounter{footnote}\footnotetext{#1}}%
934   \fi}

\@subtitlenotes The subtitlenotes
935 \def\@subtitlenotes{}

\subtitlenote Adding note to the subtitle
936 \def\subtitlenote#1{%
937   \g@addto@macro\@subtitle{\footnotemark}%
938   \if@ACM@anonymous
939     \g@addto@macro\@subtitlenotes{%
940       \stepcounter{footnote}\footnotetext{Subtitle note}}%
941   \else
942     \g@addto@macro\@subtitlenotes{%
943       \stepcounter{footnote}\footnotetext{#1}}%
944   \fi}

\@authornotes The authornotes
945 \def\@authornotes{}

\authornote Adding note to the author
946 \def\authornote#1{%
947   \if@ACM@anonymous\else
948     \g@addto@macro\addresses{\@authornotemark}
949     \g@addto@macro\@authornotes{%
950       \stepcounter{footnote}\footnotetext{#1}}%
951   \fi}

```

<code>\acmVolume</code>	<p>The current volume</p> <pre>952 \def\acmVolume#1{\def\@acmVolume{#1}} 953 \acmVolume{1}</pre>
<code>\acmNumber</code>	<p>The current number</p> <pre>954 \def\acmNumber#1{\def\@acmNumber{#1}} 955 \acmNumber{1}</pre>
<code>\acmArticle</code>	<p>The current article</p> <pre>956 \def\acmArticle#1{\def\@acmArticle{#1}} 957 \acmArticle{1}</pre>
<code>\acmArticleSeq</code>	<p>The sequence number</p> <pre>958 \def\acmArticleSeq#1{\def\@acmArticleSeq{#1}} 959 \acmArticleSeq{\@acmArticle}</pre>
<code>\acmYear</code>	<p>The current year</p> <pre>960 \def\acmYear#1{\def\@acmYear{#1}} 961 \acmYear{2016}</pre>
<code>\acmMonth</code>	<p>The current month</p> <pre>962 \def\acmMonth#1{\def\@acmMonth{#1}} 963 \acmMonth{1}</pre>
<code>\@acmPubDate</code>	<p>The publication date</p> <pre>964 \def\@acmPubDate{\ifcase\@acmMonth\or 965 January\or February\or March\or April\or May\or June\or 966 July\or August\or September\or October\or November\or 967 December\fi~\@acmYear}</pre>
<code>\acmPrice</code>	<p>The price</p> <pre>968 \def\acmPrice#1{\def\@acmPrice{#1}} 969 \acmPrice{15.00}</pre>
<code>\acmISBN</code>	<p>The book isbn</p> <pre>970 \def\acmISBN#1{\def\@acmISBN{#1}} 971 \acmISBN{978-x-xxxx-xxxx-x/YY/MM}</pre>
<code>\acmDOI</code>	<p>The paper doi</p> <pre>972 \def\acmDOI#1{\def\@acmDOI{#1}} 973 \acmDOI{10.1145/nnnnnnn.nnnnnnn}</pre>
<code>\if@ACM@badge</code>	<p>Whether to print badge. Note that either left or right badge triggers it:</p> <pre>974 \newif\if@ACM@badge 975 \@ACM@badgefalse</pre>
<code>\@ACM@badge@width</code>	<p>The width of the badge</p> <pre>976 \newlength\@ACM@badge@width 977 \setlength\@ACM@badge@width{5pc}</pre>

`\@ACM@title@width` The width of the badge
978 `\newlength\@ACM@title@width`

`\@ACM@badge@skip` The space between the badge and the title
979 `\newlength\@ACM@badge@skip`
980 `\setlength\@ACM@badge@skip{1pc}`

`\acmBadgeR` Setting the right badge
981 `\newcommand\acmBadgeR[2][\@ACM@badgetrue`
982 `\def\@acmBadgeR@url{#1}%`
983 `\def\@acmBadgeR@image{#2}}`
984 `\def\@acmBadgeR@url{}`
985 `\def\@acmBadgeR@image{}`

`\acmBadgeL` Setting the left badge
986 `\newcommand\acmBadgeL[2][\@ACM@badgetrue`
987 `\def\@acmBadgeL@url{#1}%`
988 `\def\@acmBadgeL@image{#2}}`
989 `\def\@acmBadgeL@url{}`
990 `\def\@acmBadgeL@image{}`

`\startPage` The start page of the paper
991 `\def\startPage#1{\def\@startPage{#1}}`
992 `\startPage{}`

`\terms` Terms are mostly obsolete, we use CCS now. Still it makes sense to keep them for compatibility.
993 `\def\terms#1{\def\@terms{#1}}`
994 `\terms{}`

`\keywords` Keywords are mostly obsolete, we use CCS now. Still it makes sense to keep them for compatibility.
995 `\def\keywords#1{\def\@keywords{#1}}`
996 `\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
997 `\renewenvironment{abstract}{\Collect@Body\@saveabstract}{}`

`\@saveabstract` And saving the abstract
998 `\long\def\@saveabstract#1{\long\gdef\@abstract{#1}}`
999 `\@saveabstract{}`

`\@empty` The long version of `\@empty` (to compare with `\@abstract`)
1000 `\long\def\@empty{}`

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

```
1001 \define@boolkey+{@ACM@topmatter@}[@ACM@]{printcss}[true]{%
1002   \if@ACM@printcss
1003     \ClassInfo{\@classname}{Printing CSS}%
1004   \else
1005     \ClassInfo{\@classname}{Suppressing CSS}%
1006   \fi}{\ClassError{\@classname}{printcss must be true or false}}
```

`\if@ACM@printacmref` Whether to print ACM bib

```
1007 \define@boolkey+{@ACM@topmatter@}[@ACM@]{printacmref}[true]{%
1008   \if@ACM@printacmref
1009     \ClassInfo{\@classname}{Printing bibformat}%
1010   \else
1011     \ClassInfo{\@classname}{Suppressing bibformat}%
1012   \fi}{\ClassError{\@classname}{printacmref must be true or false}}
```

`\if@ACM@printfolios` Whether to print folios

```
1013 \define@boolkey+{@ACM@topmatter@}[@ACM@]{printfolios}[true]{%
1014   \if@ACM@printfolios
1015     \ClassInfo{\@classname}{Printing folios}%
1016   \else
1017     \ClassInfo{\@classname}{Suppressing folios}%
1018   \fi}{\ClassError{\@classname}{printfolios must be true or false}}
```

`\settopmatter` The usual syntactic sugar

```
1019 \def\settopmatter#1{\setkeys{@ACM@topmatter@}{#1}}
```

Now the settings

```
1020 \settopmatter{printcss=true, printacmref=true}
1021 \if@ACM@manuscript
1022   \settopmatter{printfolios=true}
1023 \else
1024   \if@ACM@journal
1025     \settopmatter{printfolios=true}
1026   \else
1027     \settopmatter{printfolios=false}
1028   \fi
1029 \fi
```

`\@received` The container for the paper history

```
1030 \def\@received{}
```

`\received` The `\received` command

```
1031 \newcommand\received[2][\def\@tempa{#1}%
1032   \ifx\@tempa\empty
1033     \ifx\@received\empty
1034       \gdef\@received{Received #2}%
1035     \else
1036       \g@addto@macro{\@received}{; revised #2}%
```

```

1037 \fi
1038 \else
1039 \ifx\@received\@empty
1040 \gdef\@received{#1 #2}%
1041 \else
1042 \g@addto@macro{\@received}{; #1 #2}%
1043 \fi
1044 \fi}
1045 \AtEndDocument{%
1046 \ifx\@received\@empty\else
1047 \par\bigskip\noindent\small\normalfont\@received\par
1048 \fi}

```

3.10 Concepts system

We exclude CCSXML stuff generated by the ACM system:

```

1049 \RequirePackage{comment}
1050 \excludecomment{CCSXML}

```

\@concepts This is the storage macro for concepts

```

1051 \let\@concepts\@empty

```

\ccsdesc The first argument is the significance, the second is the concept(s)

```

1052 \newcommand\ccsdesc[2][100]{%
1053 \ccsdesc@parse#1~#2~}

```

\ccsdesc@parse The parser of the expression Significance~General~Specific:

```

1054 \def\ccsdesc@parse#1~#2~#3~{%
1055 \expandafter\ifx\csname CCS@#2\endcsname\relax
1056 \expandafter\gdef\csname CCS@#2\endcsname{\textbullet\textbf{#2} $\to$ }%
1057 \g@addto@macro{\@concepts}{\csname CCS@#2\endcsname}\fi
1058 \expandafter\g@addto@macro\expandafter{\csname CCS@#2\endcsname}{%
1059 \ifnum#1>499\textbf{#3; } \else
1060 \ifnum#1>299\textit{#3; } \else
1061 #3; \fi\fi}}

```

3.11 Copyright system

This is from acmcopyright.sty

\if@printcopyright A flag whether to print copyright symbol

```

1062 \newif\if@printcopyright
1063 \@printcopyrighttrue

```

\if@printpermission Whether to print permission block

```

1064 \newif\if@printpermission
1065 \@printpermissiontrue

```


\if@acmowned Whether ACM owns the rights to the paper

```
1066 \newif\if@acmowned
1067 \@acmownedtrue
```

Keys:

```
1068 \define@choicekey*{ACM@}{acmcopyrightmode}[%
1069 \acm@copyrightinput\acm@copyrightmode]{none,acmcopyright,acmlicensed,%
1070 rightsretained,usgov,usgovmixed,cagov,cagovmixed,%
1071 licensedusgovmixed,licensedcagovmixed,othergov,licensedothergov}{%
1072 \@printpermissiontrue
1073 \@printcopyrighttrue
1074 \@acmownedtrue
1075 \ifnum\acm@copyrightmode=0\relax % none
1076 \@printpermissionfalse
1077 \@printcopyrightfalse
1078 \@acmownedfalse
1079 \fi
1080 \ifnum\acm@copyrightmode=2\relax % acmlicensed
1081 \@acmownedfalse
1082 \fi
1083 \ifnum\acm@copyrightmode=3\relax % rightsretained
1084 \@acmownedfalse
1085 \fi
1086 \ifnum\acm@copyrightmode=4\relax % usgov
1087 \@printpermissiontrue
1088 \@printcopyrightfalse
1089 \@acmownedfalse
1090 \fi
1091 \ifnum\acm@copyrightmode=6\relax % cagov
1092 \@acmownedfalse
1093 \fi
1094 \ifnum\acm@copyrightmode=8\relax % licensedusgovmixed
1095 \@acmownedfalse
1096 \fi
1097 \ifnum\acm@copyrightmode=9\relax % licensedcagovmixed
1098 \@acmownedfalse
1099 \fi
1100 \ifnum\acm@copyrightmode=10\relax % othergov
1101 \@acmownedtrue
1102 \fi
1103 \ifnum\acm@copyrightmode=11\relax % licensedothergov
1104 \@acmownedfalse
1105 \fi}
```

\setcopyright This is the syntactic sugar around setting keys.

```
1106 \def\setcopyright#1{\setkeys{ACM@}{acmcopyrightmode=#1}}
1107 \setcopyright{acmcopyright}
```

\@copyrightowner Here is the owner of the copyright

```

1108 \def\@copyrightowner{%
1109   \ifcase\acm@copyrightmode\relax % none
1110   \or % acmcopyright
1111   ACM\@.
1112   \or % acmlicensed
1113   Copyright held by the owner/author(s). Publication rights licensed to
1114   ACM\@.
1115   \or % rightsretained
1116   Copyright held by the owner/author(s).
1117   \or % usgov
1118   \or % usgovmixed
1119   ACM\@.
1120   \or % cagov
1121   Crown in Right of Canada.
1122   \or %cagovmixed
1123   ACM\@.
1124   \or %licensedusgovmixed
1125   Copyright held by the owner/author(s). Publication rights licensed to
1126   ACM\@.
1127   \or %licensedcagovmixed
1128   Copyright held by the owner/author(s). Publication rights licensed to
1129   ACM\@.
1130   \or % othergov
1131   ACM\@.
1132   \or % licensedothergov
1133   Copyright held by the owner/author(s). Publication rights licensed to
1134   ACM\@.
1135   \fi}

```

\@formatdoi Print a clickable doi

```

1136 \def\@formatdoi#1{\url{http://dx.doi.org/#1}}

```

\@copyrightpermission The canned permission block.

```

1137 \def\@copyrightpermission{%
1138   \ifcase\acm@copyrightmode\relax % none
1139   \or % acmcopyright
1140   Permission to make digital or hard copies of all or part of this
1141   work for personal or classroom use is granted without fee provided
1142   that copies are not made or distributed for profit or commercial
1143   advantage and that copies bear this notice and the full citation on
1144   the first page. Copyrights for components of this work owned by
1145   others than ACM must be honored. Abstracting with credit is
1146   permitted. To copy otherwise, or republish, to post on servers or to
1147   redistribute to lists, requires prior specific permission
1148   and\hspace*{.5pt}/or a fee. Request permissions from
1149   permissions@acm.org.
1150   \or % acmlicensed
1151   Permission to make digital or hard copies of all or part of this
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```

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 1167 honored. For all other uses, contact the
 1168 owner\hspace*{.5pt}/author(s).
 1169 \or % usgov
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 1174 source.
 1175 \or % usgovmixed
 1176 ACM acknowledges that this contribution was authored or co-authored
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 1185 requires prior specific permission and\hspace*{.5pt}/or a
 1186 fee. Request permissions from permissions@acm.org.
 1187 \or % cagov
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 1196 on the first page. Copyrights for components of this work owned by
 1197 others than the Canadian Government must be honored. To copy
 1198 otherwise, distribute, republish, or post, requires prior specific
 1199 permission and\hspace*{.5pt}/or a fee. Request permissions from
 1200 permissions@acm.org.
 1201 \or % cagovmixed
 1202 ACM acknowledges that this contribution was co-authored by an
 1203 affiliate of the national government of Canada. As such, the Crown

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1236 or affiliate of a national government. As such, the Government
1237 retains a nonexclusive, royalty-free right to publish or reproduce
1238 this article, or to allow others to do so, for Government purposes
1239 only.
1240 \fi}

\copyrightyear By default, the copyright year is the same as \acmYear, but one can override this:
1241 \def\copyrightyear#1{\def\@copyrightyear{#1}}
1242 \copyrightyear{\@acmYear}

\@teaserfigures The teaser figures container
1243 \def\@teaserfigures{}

teaserfigure The teaser figure
1244 \newenvironment{teaserfigure}{\Collect@Body\@saveteaser}{}

\@saveteaser Saving the teaser
1245 \long\def\@saveteaser#1{\g@addto@macro\@teaserfigures{\@teaser{#1}}}

\thanks We redefine amsart \thanks, so the anonymous key works

```

1246 \renewcommand{\thanks}[1]{%
1247   \ifnotempty{#1}{%
1248     \if@ACM@anonymous
1249       \g@addto@macro\thankses{\thanks{A note}}%
1250     \else
1251       \g@addto@macro\thankses{\thanks{#1}}%
1252     \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*].

```

1253 \newbox\mktitle@bx

```

\maketitle The (in)famous \maketitle. Note that in sigchi-a mode authors are *not* in the title box. Another note: there is a subtle difference between author notes, title notes and thankses. The latter refer to the paper itself, and therefore belong to the copyright/permission block. By the way, this was the default behavior of the old ACM classes.

```

1254 \def\maketitle{%
1255   \if@ACM@anonymous
1256     % Anonymize omission of \author-s
1257     \ifnum\num@authorgroups=0\author{}\fi
1258   \fi
1259   \begingroup
1260   \let\@footnotemark\@footnotemark@nolink
1261   \let\@footnotetext\@footnotetext@nolink
1262   \renewcommand\thefootnote{\@fnsymbol\c@footnote}%
1263   \topnum\z@ % this prevents figures from falling at the top of page
1264               % 1
1265   \hsize=\textwidth
1266   \def\@makefnmark{\hbox{\@textsuperscript{\@thefnmark}}}%
1267   \mktitle\if@ACM@sigchiamode\else\mkauthors\fi\mkteasers
1268   \@printtopmatter
1269   \if@ACM@sigchiamode\mkauthors\fi
1270   \setcounter{footnote}{0}%
1271   \def\@makefnmark{\hbox{\@textsuperscript{\normalfont\@thefnmark}}}%
1272   \@titlenotes
1273   \@subtitlenotes
1274   \@authornotes
1275   \let\@makefnmark\relax \let\@thefnmark\relax
1276   \let\@makefntext\noindent
1277   \ifx\@empty\thankses\else
1278     \footnotetextcopyrightpermission{%
1279       \def\par{\let\par\@par}\parindent\z@\@setthanks}%
1280   \fi
1281   \footnotetextcopyrightpermission{\parindent\z@\parskip0.1\baselineskip

```

```

1282 \if@ACM@authorversion\else
1283   \if@printpermission\@copyrightpermission\par\fi
1284 \fi
1285 \if@ACM@manuscript\else
1286   \if@ACM@journal\else % Print the conference short name
1287     {\itshape \acmConference@shortname, \acmConference@venue}\par
1288   \fi
1289 \fi
1290 \if@printcopyright
1291   \copyright\ \@copyrightyear\ \@copyrightowner\
1292 \else
1293   \@copyrightyear.\
1294 \fi
1295 \if@ACM@manuscript
1296   Manuscript submitted to ACM\
1297 \else
1298   \if@ACM@authorversion
1299     This is the author's version of the work. It is posted here for
1300     your personal use. Not for redistribution. The definitive Version
1301     of Record was published in
1302     \if@ACM@journal
1303       \emph{\@journalName}%
1304     \else
1305       \emph{Proceedings of \acmConference@name, \acmConference@date}%
1306     \fi
1307     \ifx\@acmDOI\@empty
1308       .
1309     \else
1310       , \@formatdoi{\@acmDOI}.
1311     \fi\
1312   \else
1313     \if@ACM@journal
1314       \@permissionCodeOne/\@acmYear/\@acmMonth-ART\@acmArticle\
1315       \$\@acmPrice\
1316       DOI: \nolinkurl{\@acmDOI}%
1317     \else % Conference
1318       \acmISBN
1319       \ifx\@acmPrice\@empty.\else\dots$\@acmPrice\fi\
1320       DOI: \nolinkurl{\@acmDOI}%
1321     \fi
1322   \fi
1323 \fi}%
1324 \endgroup
1325 \setcounter{footnote}{0}%
1326 \mkabstract
1327 \if@ACM@printcss
1328   \ifx\@concepts\@empty\else\bgroup
1329     {\@specialsection{CCS Concepts}%
1330      \@concepts\par}\egroup
1331 \fi

```

```

1332 \fi
1333 \if\@terms\@empty\else\bgroup
1334   {\@specialsection{General Terms}%
1335    \@terms\par}\egroup
1336 \fi
1337 \ifx\@keywords\@empty\else\bgroup
1338   {\if@ACM@journal
1339    \@specialsection{Additional Key Words and Phrases}%
1340    \else
1341     \@specialsection{Keywords}%
1342     \fi
1343     \@keywords}\par\egroup
1344 \fi
1345 \andify\authors
1346 \andify\shortauthors
1347 \global\let\authors=\authors
1348 \global\let\shortauthors=\shortauthors
1349 \if@ACM@printacmref
1350   \@mkbibcitation
1351 \fi
1352 \hypersetup{pdfauthor={\authors},
1353   pdftitle={\@title}, pdfkeywords={\@concepts}}%
1354 \@printendtopmatter
1355 \@afterindentfalse
1356 \@afterheading
1357 }

```

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

```

1358 \def\@specialsection#1{%
1359   \ifcase\ACM@format@nr
1360     \relax % manuscript
1361     \par\medskip\small\noindent#1: %
1362   \or % acmsmall
1363     \par\medskip\small\noindent#1: %
1364   \or % acmlarge
1365     \par\medskip\small\noindent#1: %
1366   \or % acmtog
1367     \par\medskip\small\noindent#1: %
1368   \or % sigconf
1369     \section*{#1}%
1370   \or % siggraph
1371     \section*{#1}%
1372   \or % sigplan
1373     \paragraph*{#1}%
1374   \or % sigchi
1375     \section*{#1}%
1376   \or % sigchi-a
1377     \section*{#1}%
1378   \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.

```

1379 \def\@printtopmatter{%
1380   \ifx\@startPage\@empty
1381     \gdef\@startPage{1}%
1382   \else
1383     \setcounter{page}{\@startPage}%
1384   \fi
1385   \thispagestyle{firstpagestyle}%
1386   \noindent
1387   \ifcase\ACM@format@nr
1388   \relax % manuscript
1389     \box\mktitle@bx\par
1390     \noindent\hrulefill\par
1391   \or % acmsmall
1392     \box\mktitle@bx\par
1393     \noindent\hrulefill\par
1394   \or % acmlarge
1395     \box\mktitle@bx\par
1396     \noindent\hrulefill\par
1397   \or % acmtog
1398     \twocolumn[\box\mktitle@bx]%
1399   \or % sigconf
1400     \twocolumn[\box\mktitle@bx]%
1401   \or % siggraph
1402     \twocolumn[\box\mktitle@bx]%
1403   \or % sigplan
1404     \twocolumn[\box\mktitle@bx]%
1405   \or % sigchi
1406     \twocolumn[\box\mktitle@bx]%
1407   \or % sigchi-a
1408     \par\box\mktitle@bx\par\bigskip
1409     \if@ACM@badge
1410       \marginpar{\noindent
1411         \ifx\@acmBadgeL@image\@empty\else
1412           \href{\@acmBadgeL@url}{%
1413             \includegraphics[width=\@ACM@badge@width]{\@acmBadgeL@image}}%
1414           \hskip\@ACM@badge@skip
1415         \fi
1416         \ifx\@acmBadgeR@image\@empty\else
1417           \href{\@acmBadgeR@url}{%
1418             \includegraphics[width=\@ACM@badge@width]{\@acmBadgeR@image}}%
1419         \fi}%
1420     \fi
1421   \fi
1422 }
```

`\@mktitle` The title of the article


```

1423 \def\@mktitle{%
1424   \ifcase\ACM@format@nr
1425   \relax % manuscript
1426   \@mktitle@i
1427   \or % acmsmall
1428   \@mktitle@i
1429   \or % acmlarge
1430   \@mktitle@i
1431   \or % acmtog
1432   \@mktitle@i
1433   \or % sigconf
1434   \@mktitle@iii
1435   \or % siggraph
1436   \@mktitle@iii
1437   \or % sigplan
1438   \@mktitle@iii
1439   \or % sigchi
1440   \@mktitle@iii
1441   \or % sigchi-a
1442   \@mktitle@iv
1443   \fi
1444 }

```

\@titlefont The font to typeset title

```

1445 \def\@titlefont{%
1446   \ifcase\ACM@format@nr
1447   \relax % manuscript
1448   \LARGE\bfseries\sffamily
1449   \or % acmsmall
1450   \LARGE\bfseries\sffamily
1451   \or % acmlarge
1452   \LARGE\bfseries\sffamily
1453   \or % acmtog
1454   \Huge\sffamily
1455   \or % sigconf
1456   \Huge\sffamily\bfseries
1457   \or % siggraph
1458   \Huge\sffamily\bfseries
1459   \or % sigplan
1460   \Huge\bfseries
1461   \or % sigchi
1462   \Huge\sffamily\bfseries
1463   \or % sigchi-a
1464   \Huge\bfseries
1465   \fi}

```

\@subtitlefont The font to typeset title

```

1466 \def\@subtitlefont{%
1467   \ifcase\ACM@format@nr
1468   \relax % manuscript

```

```

1469 \mdseries
1470 \or % acmsmall
1471 \mdseries
1472 \or % acmlarge
1473 \mdseries
1474 \or % acmtog
1475 \LARGE
1476 \or % sigconf
1477 \LARGE\mdseries
1478 \or % siggraph
1479 \LARGE\mdseries
1480 \or % sigplan
1481 \LARGE\mdseries
1482 \or % sigchi
1483 \LARGE\mdseries
1484 \or % sigchi-a
1485 \mdseries
1486 \fi}

```

\mktitle@i The version of \mktitle for most journals

```

1487 \def\mktitle@i{\hsize=\textwidth
1488 \ACM@title@width=\hsize
1489 \ifx\acmBadgeL@image\empty\else
1490 \advance\ACM@title@width by -\ACM@badge@width
1491 \advance\ACM@title@width by -\ACM@badge@skip
1492 \fi
1493 \ifx\acmBadgeR@image\empty\else
1494 \advance\ACM@title@width by -\ACM@badge@width
1495 \advance\ACM@title@width by -\ACM@badge@skip
1496 \fi
1497 \setbox\mktitle@bx=\vbox{\noindent\@titlefont
1498 \ifx\acmBadgeL@image\empty\else
1499 \raisebox{-.5\baselineskip}[\z@][\z@]{\href{\acmBadgeL@url}{%
1500 \includegraphics[width=\ACM@badge@width]{\acmBadgeL@image}}}%
1501 \hskip\ACM@badge@skip
1502 \fi
1503 \parbox[t]{\ACM@title@width}{\raggedright
1504 \@titlefont\noindent
1505 \@title
1506 \ifx\@subtitle\empty\else
1507 \par\noindent{\@subtitlefont\@subtitle}
1508 \fi}%
1509 \ifx\acmBadgeR@image\empty\else
1510 \hskip\ACM@badge@skip
1511 \raisebox{-.5\baselineskip}[\z@][\z@]{\href{\acmBadgeR@url}{%
1512 \includegraphics[width=\ACM@badge@width]{\acmBadgeR@image}}}%
1513 \fi
1514 \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.

```

1515 \def\mktitle@iii{\hsize=\textwidth
1516   \setbox\mktitle@bx=\vbox{\@titlefont\centering
1517     \@ACM@title@width=\hsize
1518     \if@ACM@badge
1519       \advance\@ACM@title@width by -2\@ACM@badge@width
1520       \advance\@ACM@title@width by -2\@ACM@badge@skip
1521       \parbox[b]{\@ACM@badge@width}{\strut
1522         \ifx\@acmBadgeL@image\@empty\else
1523           \raisebox{-.5\baselineskip}[\z@][\z@]{\href{\@acmBadgeL@url}{%
1524             \includegraphics[width=\@ACM@badge@width]{\@acmBadgeL@image}}}%
1525         \fi}%
1526       \hskip\@ACM@badge@skip
1527     \fi
1528     \parbox[t]{\@ACM@title@width}{\centering\@titlefont
1529       \@title
1530       \ifx\@subtitle\@empty\else
1531         \par\noindent{\@subtitlefont\@subtitle}
1532       \fi
1533     }%
1534     \if@ACM@badge
1535       \hskip\@ACM@badge@skip
1536       \parbox[b]{\@ACM@badge@width}{\strut
1537         \ifx\@acmBadgeR@image\@empty\else
1538           \raisebox{-.5\baselineskip}[\z@][\z@]{\href{\@acmBadgeR@url}{%
1539             \includegraphics[width=\@ACM@badge@width]{\@acmBadgeR@image}}}%
1540         \fi}%
1541       \fi
1542     \par\bigskip}}%

```

`\mktitle@iv` The version of `\mktitle` for sigchi-a

```

1543 \def\mktitle@iv{\hsize=\textwidth
1544   \setbox\mktitle@bx=\vbox{\raggedright\leftskip5pc\@titlefont
1545     \noindent\leavevmode\leaders\hrule height 2pt\hfill\kern0pt\par
1546     \noindent\@title
1547     \ifx\@subtitle\@empty\else
1548       \par\noindent\@subtitlefont\@subtitle
1549     \fi
1550     \par\bigskip}}%

```

`\@ACM@addtoaddress` The macro adds an item to address using the following rules:

1. If we start a paragraph, add the item
2. Otherwise, add a comma and the item
3. However, the comma is deleted, if it is on the end of the line. We use the magic cleaders trick for this.

```

1551 \newbox\@ACM@commabox
1552 \def\@ACM@addtoaddress#1{%
1553   \ifvmode\else
1554     \setbox\@ACM@commabox=\hbox{, }%
1555     \unskip\cleaders\copy\@ACM@commabox\hskip\wd\@ACM@commabox
1556   \fi
1557   #1}

\institution Theoretically we can define the macros for \affiliation inside the \@mkauthors-style
\position commands. However, this would lead to a strange error if an author uses them outside
\department \affiliation. Of course we can make them produce an error message, but...
\streetaddress We follow the strange American tradition of no comma before zip code.
\city 1558 \if@ACM@journal
\state 1559 \let\position\@gobble
\postcode 1560 \def\institution#1{#1\ignorespaces}%
\country 1561 \let\department\@gobble
1562 \let\streetaddress\@gobble
1563 \let\city\@gobble
1564 \let\state\@gobble
1565 \let\postcode\@gobble
1566 \let\country\@gobble
1567 \else
1568 \def\position#1{#1\par}%
1569 \def\institution#1{#1\par}%
1570 \def\department#1{#1\par}%
1571 \def\streetaddress#1{#1\par}%
1572 \let\city\@ACM@addtoaddress
1573 \let\state\@ACM@addtoaddress
1574 \def\postcode#1{\unskip\space#1}%
1575 \let\country\@ACM@addtoaddress
1576 \fi

\@mkauthors Typesetting authors
1577 \def\@mkauthors{\begin{group}
1578   \hsize=\textwidth
1579   \ifcase\ACM@format@nr
1580     \relax % manuscript
1581     \@mkauthors@i
1582     \or % acmsmall
1583     \@mkauthors@i
1584     \or % acmlarge
1585     \@mkauthors@i
1586     \or % acmtog
1587     \@mkauthors@i
1588     \or % sigconf
1589     \@mkauthors@iii
1590     \or % siggraph
1591     \@mkauthors@iii
1592     \or % sigplan

```

```

1593 \mkauthors@iii
1594 \or % sigchi
1595 \mkauthors@iii
1596 \or % sigchi-a
1597 \mkauthors@iv
1598 \fi
1599 \endgroup
1600 }

```

\@authorfont Somehow different conferences use different fonts for author names. Why?

```

1601 \def\@authorfont{\Large\sffamily}

```

\@affiliationfont Font for affiliations

```

1602 \def\@affiliationfont{\normalsize\normalfont}

```

Adjusting fonts for different formats

```

1603 \ifcase\ACM@format@nr
1604 \relax % manuscript
1605 \or % acmsmall
1606 \def\@authorfont{\large\sffamily}
1607 \def\@affiliationfont{\small\normalfont}
1608 \or % acmlarge
1609 \or % acmtog
1610 \def\@authorfont{\LARGE\sffamily}
1611 \def\@affiliationfont{\large}
1612 \or % sigconf
1613 \def\@authorfont{\LARGE}
1614 \def\@affiliationfont{\large}
1615 \or % siggraph
1616 \def\@authorfont{\normalsize\normalfont}
1617 \def\@affiliationfont{\normalsize\normalfont}
1618 \or % sigplan
1619 \def\@authorfont{\Large\normalfont}
1620 \def\@affiliationfont{\normalsize\normalfont}
1621 \or % sigchi
1622 \def\@authorfont{\bfseries}
1623 \def\@affiliationfont{\mdseries}
1624 \or % sigchi-a
1625 \def\@authorfont{\bfseries}
1626 \def\@affiliationfont{\mdseries}
1627 \fi

```

\@typeset@author@line At this point we have \@currentauthors and \@currentaffiliations. We typeset them in the journal style

```

1628 \def\@typeset@author@line{%
1629 \andify\@currentauthors\par\noindent
1630 \@currentauthors\def\@currentauthors{}%
1631 \ifx\@currentaffiliations\@empty\else
1632 \andify\@currentaffiliations

```

```

1633     \unskip, {\@currentaffiliations}\par
1634   \fi
1635   \def\@currentaffiliations{}}

```

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

```

1636 \def\mkauthors@i{%
1637   \def\@currentauthors{}%
1638   \def\@currentaffiliations{}%
1639   \global\let\and\@typeset@author@line
1640   \def\@author##1{%
1641     \ifx\@currentauthors\@empty
1642       \gdef\@currentauthors{\@authorfont\MakeUppercase{##1}}%
1643     \else
1644       \g@addto@macro{\@currentauthors}{\and\MakeUppercase{##1}}%
1645     \fi
1646     \gdef\and{}}%
1647   \def\email##1##2{%
1648     \def\@tempa{##2}\ifx\@tempa\@empty\else
1649       \ifx\@currentaffiliations\@empty
1650         \gdef\@currentaffiliations{\@affiliationfont##2}%
1651       \else
1652         \g@addto@macro{\@currentaffiliations}{\and##2}%
1653       \fi
1654     \fi
1655     \global\let\and\@typeset@author@line}
1656   \global\setbox\mktitle@bx=\vbox{\noindent\box\mktitle@bx\par\medskip
1657     \noindent\addresses\@typeset@author@line
1658     \par\medskip}%
1659   \par\medskip}%
1660 }

```

\mkauthors@ii \mkauthors@iI was version used in acmtog. No longer necessary

\author@bx The box to put individual author to

```
1661 \newbox\author@bx
```

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

```
1662 \newdimen\author@bx@wd
```

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

```

1663 \newskip\author@bx@sep
1664 \author@bx@sep=1pc\relax

```

\@typeset@author@bx Typesetting the box with authors. Note that in SIGCHI-A the box is not centered.

```

1665 \def\@typeset@author@bx{\bgroup\hsize=\author@bx@wd\def\and{\par}%
1666   \global\setbox\author@bx=\vtop{\if@ACM@sigchiamode\else\centering\fi
1667     \@authorfont\@currentauthors\par\@affiliationfont
1668     \@currentaffiliation}\egroup

```

```

1669 \box\author@bx\hspace{\author@bx@sep}%
1670 \gdef\@currentauthors{}%
1671 \gdef\@currentaffiliation{}}

```

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

```

1672 \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.

```

1673 \author@bx@wd=\textwidth\relax
1674 \advance\author@bx@wd by -\author@bx@sep\relax
1675 \ifcase\num@authorgroups
1676 \relax % 0?
1677 \or % 1=one author per row
1678 \or % 2=two authors per row
1679 \divide\author@bx@wd by \num@authorgroups\relax
1680 \or % 3=three authors per row
1681 \divide\author@bx@wd by \num@authorgroups\relax
1682 \or % 4=two authors per row (!)
1683 \divide\author@bx@wd by 2\relax
1684 \else % three authors per row
1685 \divide\author@bx@wd by 3\relax
1686 \fi
1687 \advance\author@bx@wd by -\author@bx@sep\relax

```

Now, parsing of \addresses:

```

1688 \gdef\@currentauthors{}%
1689 \gdef\@currentaffiliation{}%
1690 \def\@author##1{\ifx\@currentauthors\@empty
1691 \gdef\@currentauthors{\par##1}%
1692 \else
1693 \g@addto@macro\@currentauthors{\par##1}%
1694 \fi
1695 \gdef\and{}}%
1696 \def\email##1##2{\ifx\@currentaffiliation\@empty
1697 \gdef\@currentaffiliation{\nolinkurl{##2}}%
1698 \else
1699 \g@addto@macro\@currentaffiliation{\par\nolinkurl{##2}}%
1700 \fi}%
1701 \def\affiliation##1##2{\ifx\@currentaffiliation\@empty
1702 \gdef\@currentaffiliation{##2}%
1703 \else
1704 \g@addto@macro\@currentaffiliation{\par##2}%
1705 \fi
1706 \global\let\and\@typeset@author@bx
1707 }%

```

Actual typesetting is done by \and macro:

```

1708 \hsize=\textwidth
1709 \global\setbox\mktitle@bx=\vbox{\noindent
1710   \box\mktitle@bx\par\medskip\leavevmode
1711   \lineskip=1pc\relax\centering\hspace*{-1em}%
1712   \addresses\let\and\@typeset@author@bx\and\par\bigskip}}

```

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

```

1713 \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.

```

1714 \author@bx@wd=\columnwidth\relax
1715 \advance\author@bx@wd by -\author@bx@sep\relax
1716 \ifcase\num@authorgroups
1717 \relax % 0?
1718 \or % 1=one author per row
1719 \else % 2=two authors per row
1720 \divide\author@bx@wd by 2\relax
1721 \fi
1722 \advance\author@bx@wd by -\author@bx@sep\relax

```

Now, parsing of \addresses:

```

1723 \gdef\@currentauthors{}%
1724 \gdef\@currentaffiliation{}%
1725 \def\@author##1{\ifx\@currentauthors\@empty
1726   \gdef\@currentauthors{\par##1}%
1727   \else
1728   \g@addto@macro\@currentauthors{\par##1}%
1729   \fi
1730 \gdef\and{}}%
1731 \def\email##1##2{\ifx\@currentaffiliation\@empty
1732   \gdef\@currentaffiliation{\nolinkurl{##2}}%
1733   \else
1734   \g@addto@macro\@currentaffiliation{\par\nolinkurl{##2}}%
1735   \fi}%
1736 \def\affiliation##1##2{\ifx\@currentaffiliation\@empty
1737   \gdef\@currentaffiliation{##2}%
1738   \else
1739   \g@addto@macro\@currentaffiliation{\par##2}%
1740   \fi
1741 \global\let\and\@typeset@author@bx}%
1742 %

```

Actual typesetting is done by \and macro

```

1743 \bgroup\hsize=\columnwidth
1744 \par\raggedright\leftskip=\z@
1745 \lineskip=1pc\noindent
1746 \addresses\let\and\@typeset@author@bx\and\par\bigskip\egroup}

```


`\@authornotemark` Adding footnotemark to authors
1747 `\def\@authornotemark{\g@addto@macro\@currentauthors{\footnotemark}}`

`\@mkteasers` Typesetting teasers
1748 `\def\@mkteasers{%`
1749 `\ifx\@teaserfigures\@empty\else`
1750 `\def\@teaser##1{\par\bigskip\bgroup`
1751 `\captionsetup{type=figure}##1\egroup\par}`
1752 `\global\setbox\mktitle@bx=\vbox{\noindent\box\mktitle@bx\par`
1753 `\noindent\@teaserfigures\par\medskip}%`
1754 `\fi}`

`\@setaddresses` This is an amsart macro, which we do not need.
1755 `\def\@setaddresses{}`

`\@mkabstract` Typesetting abstract
1756 `\def\@mkabstract{\bgroup`
1757 `\ifx\@abstract\@empty\else`
1758 `{\if@ACM@journal`
1759 `\small\noindent`
1760 `\else`
1761 `\section*{Abstract}%`
1762 `\fi`
1763 `\phantomsection\addcontentsline{toc}{section}{Abstract}%`
1764 `\ignorespaces\@abstract\par}%`
1765 `\fi\egroup}`

`\@mkbibcitation` Print bibcitation format
1766 `\def\@mkbibcitation{\bgroup`
1767 `\def\footnotemark{}%`
1768 `\par\medskip\small\noindent{\bfseries ACM Reference format:}\par\nobreak`
1769 `\noindent\authors. \@acmYear. \@title.`
1770 `\if@ACM@journal`
1771 `\textit{\@journalNameShort}`
1772 `\@acmVolume, \@acmNumber, Article~\@acmArticle\ (\@acmPubDate),`
1773 `\ref{TotPages}~pages.`
1774 `\else`
1775 `In \textit{Proceedings of \acmConference@name, \acmConference@venue,`
1776 `\acmConference@date`
1777 `\ifx\acmConference@name\acmConference@shortname\else`
1778 `\ (\acmConference@shortname)\fi`
1779 `,} \ref{TotPages}~pages.`
1780 `\fi\par`
1781 `\noindent DOI: \nolinkurl{\@acmDOI}`
1782 `\par\egroup}`

`\@printendtopmatter` End the top matter
1783 `\def\@printendtopmatter{\par\medskip`
1784 `\ifcase\ACM@format@nr`

```

1785 \relax % manuscript
1786 \noindent\hrulefill\par\medskip
1787 \or % acmsmall
1788 \noindent\hrulefill\par\medskip
1789 \or % acmlarge
1790 \noindent\hrulefill\par\medskip
1791 \or % acmtog
1792 \par\bigskip
1793 \or % sigconf
1794 \par\bigskip
1795 \or % siggraph
1796 \par\bigskip
1797 \or % sigplan
1798 \par\bigskip
1799 \or % sigchi
1800 \par\bigskip
1801 \or % sigchi-a
1802 \fi
1803 }

```

\setthanks We redefine \setthanks using \long

```

1804 \def\setthanks{\long\def\thanks##1{\par##1\@addpunct.}\thankses}

```

3.13 Headers and Footers

We use fancyhdr for our headers and footers:

```

1805 \RequirePackage{fancyhdr}

```

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

```

1806 \if@ACM@review
1807 \newsavebox{\ACM@linecount@bx}
1808 \savebox{\ACM@linecount@bx}[4em][t]{\parbox[t]{4em}{%
1809 \newlength\ACM@linecount@bxht\setlength{\ACM@linecount@bxht}{-\baselineskip}
1810 \@tempcnta\@ne\relax
1811 \loop{\color{ACMRed}\scriptsize\the\@tempcnta}\@tempcnta\@ne
1812 \advance\@tempcnta by \@ne
1813 \addtolength{\ACM@linecount@bxht}{\baselineskip}
1814 \ifdim\ACM@linecount@bxht<\textheight\repeat}}
1815 \fi

```

\ACM@linecount How to display the box

```

1816 \def\ACM@linecount{%
1817 \if@ACM@review
1818 \begin{picture}(0,0)%
1819 \put(-26,-22){\usebox{\ACM@linecount@bx}}%
1820 \end{picture}%
1821 \fi}

```

`\@shortauthors` Even if the author redefined `\shortauthors`, we do not print them in the anonymous mode in the headers:

```

1822 \def\@shortauthors{\if@ACM@anonymous Anon.\else\shortauthors\fi}

```

`\@headfootfont` The font to typeset header and footer text.

```

1823 \def\@headfootfont{%
1824   \ifcase\ACM@format@nr
1825   \relax % manuscript
1826   \sffamily
1827 \or % acmsmall
1828   \sffamily
1829 \or % acmlarge
1830   \sffamily
1831 \or % acmtog
1832   \sffamily
1833 \or % sigconf
1834   \sffamily
1835 \or % siggraph
1836   \sffamily
1837 \or % sigplan
1838   \sffamily
1839 \or % sigchi
1840   \sffamily
1841 \or % sigchi-a
1842   \sffamily
1843 \fi}

```

`standardpagestyle` The pagestyle for all pages but the first one

```

1844 \fancypagestyle{standardpagestyle}{%
1845   \fancyhf{}%
1846   \renewcommand{\headrulewidth}{\z@}%
1847   \renewcommand{\footrulewidth}{\z@}%
1848   \ifcase\ACM@format@nr
1849   \relax % manuscript
1850   \fancyhead[LE]{\ACM@linecount\if@ACM@printfolios\thepage\fi}%
1851   \fancyhead[RO]{\if@ACM@printfolios\thepage\fi}%
1852   \fancyhead[RE]{\@shortauthors}%
1853   \fancyhead[LO]{\ACM@linecount\shorttitle}%
1854   \fancyfoot[RO,LE]{\footnotesize Manuscript submitted to ACM}%
1855   \or % acmsmall
1856   \fancyhead[LE]{\ACM@linecount\@headfootfont\@acmArticle\if@ACM@printfolios:\thepage\fi}%
1857   \fancyhead[RO]{\@headfootfont\@acmArticle\if@ACM@printfolios:\thepage\fi}%
1858   \fancyhead[RE]{\@headfootfont\@shortauthors}%
1859   \fancyhead[LO]{\ACM@linecount\@headfootfont\shorttitle}%
1860   \fancyfoot[RO,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
1861     \@acmNumber, Article \@acmArticle. Publication date: \@acmPubDate.}%
1862   \or % acmlarge
1863   \fancyhead[LE]{\ACM@linecount\@headfootfont
1864     \@acmArticle:\if@ACM@printfolios\thepage\quad\textbullet\quad\fi\@shortauthors}%

```

```

1865 \fancyhead[LO]{\ACM@linecount}%
1866 \fancyhead[RO]{\@headfootfont
1867 \shorttitle\quad\textbullet\quad\@acmArticle\if@ACM@printfolios:\thepage\fi}%
1868 \fancyfoot[RO,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
1869 \@acmNumber, Article \@acmArticle. Publication date: \@acmPubDate.}%
1870 \or % acmtog
1871 \fancyhead[LE]{\ACM@linecount\@headfootfont
1872 \@acmArticle:\if@ACM@printfolios\thepage\quad\textbullet\quad\fi\@shortauthors}%
1873 \fancyhead[LO]{\ACM@linecount}%
1874 \fancyhead[RO]{\@headfootfont
1875 \shorttitle\quad\textbullet\quad\@acmArticle\if@ACM@printfolios:\thepage\fi}%
1876 \fancyfoot[RO,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
1877 \@acmNumber, Article \@acmArticle. Publication date: \@acmPubDate.}%
1878 \else % Proceedings
1879 \fancyfoot[C]{\if@ACM@printfolios\footnotesize\thepage\fi}%
1880 \fancyhead[LO]{\ACM@linecount\@headfootfont\shorttitle}%
1881 \fancyhead[RE]{\@headfootfont\@shortauthors}%
1882 \fancyhead[LE]{\ACM@linecount\@headfootfont\acmConference@shortname,
1883 \acmConference@date, \acmConference@venue}%
1884 \fancyhead[RO]{\@headfootfont\acmConference@shortname,
1885 \acmConference@date, \acmConference@venue}%
1886 \fi
1887 \if@ACM@sigchiamode
1888 \fancyheadoffset[L]{\dimexpr(\marginparsep+\marginparwidth)}%
1889 \fi
1890 }
1891 \pagestyle{standardpagestyle}

\@folio@wd Folio blob width, height, offsets and max number
\@folio@ht
\@folio@voffset
\@folio@max
1892 \newdimen\@folio@wd
1893 \@folio@wd=\z@
1894 \newdimen\@folio@ht
1895 \@folio@ht=\z@
1896 \newdimen\@folio@voffset
1897 \@folio@voffset=\z@
1898 \def\@folio@max{1}
1899 \ifcase\ACM@format@nr
1900 \relax % manuscript
1901 \or % acmsmall
1902 \@folio@wd=45.75pt\relax
1903 \@folio@ht=1.25in\relax
1904 \@folio@voffset=.2in\relax
1905 \def\@folio@max{8}
1906 \or % acmlarge
1907 \@folio@wd=43.25pt\relax
1908 \@folio@ht=79pt\relax
1909 \@folio@voffset=.55in\relax
1910 \def\@folio@max{10}
1911 \fi

```

\@folioblob The macro to typeset the folio blob.

```

1912 \def\@folioblob{\@tempcnta=\@acmArticleSeq\relax
First, we calculate \@acmArticleSeq modulo \@folio@max
1913 \loop
1914   \ifnum\@tempcnta>\@folio@max\relax
1915     \advance\@tempcnta by - \@folio@max
1916   \repeat

1917   \advance\@tempcnta by -1\relax
1918   \@tempdima=\@folio@ht\relax
1919   \multiply\@tempdima by \the\@tempcnta\relax
1920   \advance\@tempdima by -\@folio@voffset\relax
1921   \begin{picture}(0,0)
1922     \makebox[\z@]{\raisebox{-\@tempdima}{%
1923       \rlap{%
1924         \raisebox{-0.45\@folio@ht}{\z@}{\z@}{%
1925           \rule{\@folio@wd}{\@folio@ht}}}%
1926       \parbox{\@folio@wd}{%
1927         \centering
1928         \textcolor{white}{\LARGE\bfseries\sffamily\@acmArticle}}}}
1929   \end{picture}}
1930
```

firstpagestyle The pagestyle for the first page only.

```

1931 \fancypagestyle{firstpagestyle}{%
1932   \fancyhf{}%
1933   \renewcommand{\headrulewidth}{\z@}%
1934   \renewcommand{\footrulewidth}{\z@}%
1935   \ifcase\ACM@format@nr
1936   \relax % manuscript
1937     \fancyhead[L]{\ACM@linecount}%
1938     \fancyfoot[RO,LE]{\if@ACM@printfolios\small\thepage\fi}%
1939     \fancyfoot[RE,LO]{\footnotesize Manuscript submitted to ACM}%
1940   \or % acmsmall
1941     \fancyfoot[RO,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
1942       \@acmNumber, Article \@acmArticle. Publication date:
1943       \@acmPubDate.}%
1944     \fancyhead[LE]{\ACM@linecount\@folioblob}%
1945     \fancyhead[LO]{\ACM@linecount}%
1946     \fancyhead[RO]{\@folioblob}%
1947     \fancyheadoffset[RO,LE]{0.6\@folio@wd}%
1948   \or % acmlarge
1949     \fancyfoot[RO,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
1950       \@acmNumber, Article \@acmArticle. Publication date:
1951       \@acmPubDate.}%
1952     \fancyhead[RO]{\@folioblob}%
1953     \fancyhead[LE]{\ACM@linecount\@folioblob}%
1954     \fancyhead[LO]{\ACM@linecount}%
1955     \fancyheadoffset[RO,LE]{1.4\@folio@wd}%

```

```

1956 \or % acmtog
1957 \fancyfoot[R0,LE]{\footnotesize \@journalName, Vol. \@acmVolume, No.
1958 \@acmNumber, Article \@acmArticle. Publication date:
1959 \@acmPubDate.}%
1960 \fancyhead[L]{\ACM@linecount}%
1961 \else % Conference proceedings
1962 \fancyhead[L]{\ACM@linecount}%
1963 \fancyfoot[C]{\if@ACM@printfolios\footnotesize\thepage\fi}%
1964 \fi
1965 }

```

3.14 Sectioning

Sectioning is different for different levels

```

1966 \renewcommand\section{\@startsection{section}{1}{\z@}%
1967 {- .75\baselineskip \@plus -2\p@ \@minus -.2\p@}%
1968 {.25\baselineskip}%
1969 {\@secfont}}
1970 \renewcommand\subsection{\@startsection{subsection}{2}{\z@}%
1971 {- .75\baselineskip \@plus -2\p@ \@minus -.2\p@}%
1972 {.25\baselineskip}%
1973 {\@subsecfont}}
1974 \renewcommand\subsubsection{\@startsection{subsubsection}{3}{10pt}%
1975 {- .5\baselineskip \@plus -2\p@ \@minus -.2\p@}%
1976 {-3.5\p@}%
1977 {\@subsubsecfont\@adddotafter}}
1978 \renewcommand\paragraph{\@startsection{paragraph}{4}{\parindent}%
1979 {- .5\baselineskip \@plus -2\p@ \@minus -.2\p@}%
1980 {-3.5\p@}%
1981 {\@parfont\@adddotafter}}
1982 \renewcommand\part{\@startsection{part}{9}{\z@}%
1983 {-10\p@ \@plus -4\p@ \@minus -2\p@}%
1984 {4\p@}%
1985 {\@parfont}}

```

`\section@raggedright` Special version of `\raggedright` compatible with `\MakeUppercase`

```

1986 \def\section@raggedright{\@rightskip\@flushglue
1987 \rightskip\@rightskip
1988 \leftskip\z@skip
1989 \parindent\z@}

```

```

\@secfont Fonts for sections etc. are different for different formats.
\@subsecfont
\@subsubsecfont
\@parfont
1990 \def\@secfont{\sffamily\bfseries\section@raggedright\MakeUppercase}
1991 \def\@subsecfont{\sffamily\bfseries\section@raggedright}
1992 \def\@subsubsecfont{\sffamily\itshape}
1993 \def\@parfont{\itshape}
1994 \setcounter{secnumdepth}{3}
1995 \ifcase\ACM@format@nr
1996 \relax % manuscript

```

```

1997 \or % acmsmall
1998 \or % acmlarge
1999 \def\@secfont{\sffamily\large\section@raggedright\MakeUppercase}
2000 \def\@subsecfont{\sffamily\large\section@raggedright}
2001 \or % acmtog
2002 \def\@secfont{\sffamily\large\section@raggedright\MakeUppercase}
2003 \def\@subsecfont{\sffamily\large\section@raggedright}
2004 \or % sigconf
2005 \def\@secfont{\bfseries\Large\section@raggedright\MakeUppercase}
2006 \def\@subsecfont{\bfseries\Large\section@raggedright}
2007 \or % siggraph
2008 \def\@secfont{\bfseries\sffamily\Large\section@raggedright\MakeUppercase}
2009 \def\@subsecfont{\bfseries\sffamily\Large\section@raggedright}
2010 \or % sigplan
2011 \def\@secfont{\bfseries\Large\section@raggedright}
2012 \def\@subsecfont{\bfseries\section@raggedright}
2013 \renewcommand\subsubsection{\@startsection{subsubsection}{3}{\z@}%
2014   {-0.75\baselineskip \@plus -2\p@ \@minus -.2\p@}%
2015   {.25\baselineskip}%
2016   {\@subsubsecfont}}
2017 \def\@subsubsecfont{\bfseries\section@raggedright}
2018 \renewcommand\paragraph{\@startsection{paragraph}{4}{\z@}%
2019   {-0.5\baselineskip \@plus -2\p@ \@minus -.2\p@}%
2020   {-3.5\p@}%
2021   {\@parfont\@addspaceafter}}
2022 \def\@parfont{\bfseries\itshape}
2023 \renewcommand\subparagraph{\@startsection{subparagraph}{5}{\z@}%
2024   {-0.5\baselineskip \@plus -2\p@ \@minus -.2\p@}%
2025   {-3.5\p@}%
2026   {\@subparfont\@addspaceafter}}
2027 \def\@subparfont{\itshape}
2028 \or % sigchi
2029 \setcounter{secnumdepth}{1}
2030 \def\@secfont{\bfseries\sffamily\section@raggedright\MakeUppercase}
2031 \def\@subsecfont{\bfseries\sffamily\section@raggedright}
2032 \or % sigchi-a
2033 \setcounter{secnumdepth}{0}
2034 \def\@secfont{\bfseries\sffamily\section@raggedright\MakeUppercase}
2035 \def\@subsecfont{\bfseries\sffamily\section@raggedright}
2036 \fi

```

\@adddotafter Add punctuation after the command

```
2037 \def\@adddotafter#1{#1\@addpunct{.}}
```

\@addspaceafter Add space after the command

```
2038 \def\@addspaceafter#1{#1\@addpunct{\enspace}}
```

3.15 Theorems

`\acmplainbodyfont` The font to typeset the acmplain theorem style body.
2039 `\def\acmplainbodyfont{\itshape}`

`\acmplainindent` The amount to indent the acmplain theorem style.
2040 `\def\acmplainindent{\parindent}`

`\acmplainheadfont` The font to typeset the acmplain theorem style head.
2041 `\def\acmplainheadfont{\scshape}`

`\acmplainnotefont` The font to typeset the acmplain theorem style note.
2042 `\def\acmplainnotefont{\@empty}`

Customization of acmplain theorem style:

2043 `\ifcase\ACM@format@nr`
2044 `\relax % manuscript`
2045 `\or % acmsmall`
2046 `\or % acmlarge`
2047 `\or % acmtog`
2048 `\or % sigconf`
2049 `\or % siggraph`
2050 `\or % sigplan`
2051 `\def\acmplainbodyfont{\itshape}`
2052 `\def\acmplainindent{\z@}`
2053 `\def\acmplainheadfont{\bfseries}`
2054 `\def\acmplainnotefont{\normalfont}`
2055 `\or % sigchi`
2056 `\or % sigchi-a`
2057 `\fi`

`acmplain` The acmplain theorem style

2058 `\newtheoremstyle{acmplain}%`
2059 `{.5\baselineskip\@plus.2\baselineskip`
2060 `\@minus.2\baselineskip}% space above`
2061 `{.5\baselineskip\@plus.2\baselineskip`
2062 `\@minus.2\baselineskip}% space below`
2063 `{\acmplainbodyfont}% body font`
2064 `{\acmplainindent}% indent amount`
2065 `{\acmplainheadfont}% head font`
2066 `{.}% punctuation after head`
2067 `{.5em}% spacing after head`
2068 `{\thmname{#1}\thmnumber{ #2}\thmnote{ {\acmplainnotefont(#3)}}}% head spec`

`\acmdefinitionbodyfont` The font to typeset the acmdefinition theorem style body.
2069 `\def\acmdefinitionbodyfont{\normalfont}`

`\acmdefinitionindent` The amount to indent the acmdefinition theorem style.
2070 `\def\acmdefinitionindent{\parindent}`

`\acmdefinitionheadfont` The font to typeset the acmdefinition theorem style head.

```
2071 \def\acmdefinitionheadfont{\itshape}
```

`\acmdefinitionnotefont` The font to typeset the acmdefinition theorem style note.

```
2072 \def\acmdefinitionnotefont{\@empty}
```

Customization of acmdefinition theorem style:

```
2073 \ifcase\ACM@format@nr
```

```
2074 \relax % manuscript
```

```
2075 \or % acmsmall
```

```
2076 \or % acmlarge
```

```
2077 \or % acmtog
```

```
2078 \or % sigconf
```

```
2079 \or % siggraph
```

```
2080 \or % sigplan
```

```
2081 \def\acmdefinitionbodyfont{\normalfont}
```

```
2082 \def\acmdefinitionindent{\z@}
```

```
2083 \def\acmdefinitionheadfont{\bfseries}
```

```
2084 \def\acmdefinitionnotefont{\normalfont}
```

```
2085 \or % sigchi
```

```
2086 \or % sigchi-a
```

```
2087 \fi
```

`acmdefinition` The acmdefinition theorem style

```
2088 \newtheoremstyle{acmdefinition}%
```

```
2089 { .5\baselineskip\@plus.2\baselineskip
```

```
2090 \@minus.2\baselineskip}% space above
```

```
2091 { .5\baselineskip\@plus.2\baselineskip
```

```
2092 \@minus.2\baselineskip}% space below
```

```
2093 {\acmdefinitionbodyfont}% body font
```

```
2094 {\acmdefinitionindent}% indent amount
```

```
2095 {\acmdefinitionheadfont}% head font
```

```
2096 { .}% punctuation after head
```

```
2097 { .5em}% spacing after head
```

```
2098 {\thmname{#1}\thmnumber{ #2}\thmnote{ \acmdefinitionnotefont{#3}}}% head spec
```

The definitions for theorems:

```
2099 \theoremstyle{acmplain}
```

```
2100 \newtheorem{theorem}{Theorem}[section]
```

```
2101 \newtheorem{conjecture}[theorem]{Conjecture}
```

```
2102 \newtheorem{proposition}[theorem]{Proposition}
```

```
2103 \newtheorem{lemma}[theorem]{Lemma}
```

```
2104 \newtheorem{corollary}[theorem]{Corollary}
```

```
2105 \theoremstyle{acmdefinition}
```

```
2106 \newtheorem{example}[theorem]{Example}
```

```
2107 \newtheorem{definition}[theorem]{Definition}
```

```
2108 \theoremstyle{acmplain}
```

`\@proofnamefont` The font to typeset the proof name.

```
2109 \def\@proofnamefont{\scshape}
```

\@proofindent Whether or not to indent proofs.

```
2110 \def\@proofindent{\indent}
```

Customization of proof environment.

```
2111 \ifcase\ACM@format@nr
2112 \relax % manuscript
2113 \or % acmsmall
2114 \or % acmlarge
2115 \or % acmtog
2116 \or % sigconf
2117 \or % siggraph
2118 \or % sigplan
2119 \def\@proofnamefont{\itshape}
2120 \def\@proofindent{\noindent}
2121 \or % sigchi
2122 \or % sigchi-a
2123 \fi
```

proof We want some customization of proof environment.

```
2124 \renewenvironment{proof}[1][\proofname]{\par
2125 \pushQED{\qed}%
2126 \normalfont \topsep6\p@\@plus6\p@\relax
2127 \trivlist
2128 \item[\@proofindent\hskip\labelsep
2129 {\@proofnamefont #1\@addpunct{.}}]\ignorespaces
2130 }{%
2131 \popQED\endtrivlist\@endpfalse
2132 }
```

3.16 Acknowledgments

\acks This is a comment-like structure

```
2133 \specialcomment{acks}{%
2134 \begingroup
2135 \section*{Acknowledgments}
2136 \phantomsection\addcontentsline{toc}{section}{Acknowledgments}
2137 }{%
2138 \endgroup
2139 }
```

\grantsponsor We just typeset the name of the sponsor

```
2140 \def\grantsponsor#1#2#3{#2}
```

\grantnum

```
2141 \newcommand\grantnum[3][\#3%
2142 \def\@tempa{#1}\ifx\@tempa\@empty\else\space(\url{#1})\fi}
```

3.17 Conditional typesetting

We use the comment package for conditional typesetting:

```
2143 \if@ACM@screen
2144   \includecomment{screenonly}
2145   \excludecomment{printonly}
2146 \else
2147   \excludecomment{screenonly}
2148   \includecomment{printonly}
2149 \fi
2150 \if@ACM@anonymous
2151   \excludecomment{anonsuppress}
2152   \excludecomment{acks}
2153 \else
2154   \includecomment{anonsuppress}
2155 \fi
```

3.18 Additional bibliography commands

`\showeprint` The command `\showeprint` has two arguments: the (optional) prefix and the eprint number. Right now the only prefix we understand is the (lowercase) word ‘arxiv’ (see <http://arxiv.org/hypertex/bibstyles/>).

```
2156 \newcommand\showeprint[2][arxiv]{%
2157   \def\@tempa{#1}%
2158   \ifx\@tempa\@empty\def\@tempa{arxiv}\fi
2159   \def\@tempb{arxiv}%
2160   \ifx\@tempa\@tempb
2161     arXiv:\href{http://arxiv.org/abs/#2}{#2}\else arXiv:#2%
2162   \fi}
```

3.19 End of Class

```
2163 \normalsize\normalfont
2164 </class>
```

References

- [1] UK T_EX Users Group. UK list of T_EX frequently asked questions. <http://www.tex.ac.uk>, 2016.
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Change History

v1.00	General: First released version	22	v1.05	General: Added processing doi numbers for acmsiggraph and doi numbers for sigproc.bib	22
v1.01	General: Changed hyperref colors in screen mode (closes https://github.com/borisveytsman/acmart/issues/1)	22		Patched \setcitestyle command; closes https://github.com/borisveytsman/acmart/issues/19	22
	Defined ACM colors	22	v1.06	\@ACM@badge@skip: Added macro	46
	Explicitly put draft option (closes https://github.com/borisveytsman/acmart/issues/4)	24		\@ACM@badge@width: Added macro	45
	Set headheight to 1pc for all formats (closes https://github.com/borisveytsman/acmart/issues/5)	22		\@ACM@title@width: Added macro	46
v1.02	General: Added TOPS and TSC (closes https://github.com/borisveytsman/acmart/issues/12)	22		\@mktitle@i: Added processing badges	58
	Documentation changes (closes https://github.com/borisveytsman/acmart/issues/13)	22		Made generic	58
v1.03	\@formatdoi: Added macro	50		\@mktitle@ii: Now this macro is obsolete	58
	\if@ACM@authorversion: Added macro	23		\@mktitle@iii: Added processing badges	59
	\maketitle: Added special case of authorversion	53		Made more generic	59
	General: Added anonsuppress environment	22		\@mktitle@iv: Made more generic	59
	Added authorversion option (closes https://github.com/borisveytsman/acmart/issues/9)	22		\@printtopmatter: Added processing badges	55
v1.04	\acmArticleSeq: Name change by Matthew Fluet	45		\@subtitlefont: Added macro	57
	\acmDOI: Name change by Matthew Fluet	45		\@titlefont: Added macro	57
	\acmISBN: Name change by Matthew Fluet	45		\acmBadgeL: Added macro	46
	General: Updated bibliography for siggraph	22		\acmBadgeR: Added macro	46
				\if@ACM@badge: Added macro	45
			v1.07	\maketitle: Corrected a bug with abstract footnotes	53
				Corrected a bug with permission and footnotes order	53
			v1.08	General: SIGPLAN reformatting by Matthew Fluet	22
				Typos corrected (Tobias Pape)	22
			v1.09	General: Revert SIGPLAN caption rules	22
			v1.10	\maketitle: Corrected a bug with doi in manuscript and author version, https://github.com/borisveytsman/acmart/issues/36	53

General: Changes of	v1.14
‘licensedothergov’ wording	49
standardpagestyle: Reversed folios	
location	67
v1.11	
General: Customization of ACM	
theorem styles and proof	
environment by Matthew Fluet	22
v1.12	
\@marginfigure: Now centering by	
default	35
\@marginfigure: Now centering by	
default	36
\@parfont: Moved to	
\section@raggedright	70
\copyrightpermissionfootnoterule:	
Added macro	33
\descriptionlabel: Redefined	37
\footnoterule: Made shorter	33
\if@ACM@natbib@override: Added	
macro	23
\if@ACM@newfonts: Added macro	34
\maketitle: Moved thanks to	
copyrightpermission box	53
\section@raggedright: Introduced	
macro	70
General: Added graceful behavior	
when libertine fonts are absent	34
Documentation updates	22
v1.13	
\@mpfootnotetext: Made minipage	
footnotes centered	34
\bibliographystyle: Redefined	
macro	31
\bibstyle@acmauthoryear: Added	
macro	27
\bibstyle@acmnumeric: Added	
macro	28
\if@ACM@printfolios: Added macro	47
General: Font adjustments for	
acmsmall	61
Increased font size for ACM Large	
Print bibliographic information by	
default for the proceedings	47
standardpagestyle: Added headers	
for sigs	67
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