The AMS Export BibTeX style [amsxport]

American Mathematical Society
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1 Introduction

amsxport is the collective name for a collection of BibTeX styles that form a bridge between BibTeX and amsrefs. It produces output in which the structural information of the original BibTeX database file is retained. No ad hoc visual formatting is introduced that would hamper the application of alternative design specifications when rendering the information on paper or screen. This makes it possible to have BibTeX handle only extraction and sorting and leave the visual appearance to be controlled entirely by \LaTeX. The process of applying typical bibliography specs to exported data is illustrated in the amsrefs package. The authoritative description of the export format is in the amsrefs documentation, inasmuch as interpreting the format is the chief task of the amsrefs package.

Each of the five .bst files generated from this file corresponds to a combination of amsrefs package options, as follows:

amsrn: This is the default style, used when none of the following is appropriate.
amsru: This is used when the citation-order option is specified. It is identical to amsrn except that the bibliography items are not sorted.

amsra: This is when with the alphabetic option is specified, but y2k option is not also specified.

amsry: This is used when both the alphabetic and y2k options are specified.

amsrs: This is used when the shortalphabetic option is specified.

Readers may wish to refer also to the standard BibTeX documentation (btxdoc.tex, btxhak.tex, btxbst.doc) for background information.

2 Implementation

The list below gives the fields that are expected to occur. (Other fields will be discarded without comment.) suggested fields.

\begin{verbatim}
⟨∗bst⟩
ENTRY
{
  address institution number status
  archive isbn organization subtitle
  author issn pages title
  booktitle journal part translator
  chapter key pii type
  date language preprint url
  edition meeting publisher volume
  editor month review xid
  eprint mrid school year
  howpublished note series
}
{ }
{ label }
\end{verbatim}

Some comments about specific fields:

archive: The archive that holds the eprint listed in the eprint field.

author: BibTeX doesn’t allow this field (or any field) to be used more than once, but in the output its contents will be split into a separate key-value pair for each name. Likewise for editor and translator.

crossref: This is a built-in field type, so it doesn’t occur in the argument of ENTRY above.

date: This is a generalization of the year and month fields. Its value should be written in ISO 8601 format, e.g., 1987-06-05; but the day and month are omissible, so this can be easily be used instead of the year field.

edition: For books. The BibTeX documentation suggests that the value of this field should be an ordinal word such as “Second”. This may be because the BibTeX language provides only the weakest sort of support for an is-numeric test.

eprint: Electronic preprint information such as for www.arXiv.org.
2. IMPLEMENTATION

institution: What’s the difference between an institution and an organization? The Bib\TeX documentation says that institution should be used for technical reports and organization for other entry types.


issn: International Standard Serial Number. See the discussion of journal abbreviations.

language: Language of the work. This is especially desirable when the value of the title field is a translation of the true title (most often when the original language is one like Arabic or Chinese that poses rendering problems for non-native software).

meeting: Since Bib\TeX doesn’t allow a field name to be the same as a function name, we have to use meeting instead of conference if we want to give the title of a conference in a dedicated field.

mrnumber: An alias for review which we provide because MathSciNet has been using it in the Bib\TeX output that it provides for a couple of years already.

organization: See the comment for institution.

pii: Publisher Item Identifier

part: This is for a long journal article that is published in separate issues of the same journal. There should be a separate Bib\TeX entry for each part (though all the ones after part 1 could crossref the first one).

preprint: It is not possible quite yet to assume that all preprints should be classified as eprints. If you have a preprint that is not an eprint, use this field to give the “address” where the preprint may be found (institution, preprint number, etc.).

review: Review numbers or similar pointers, e.g., for Mathematical Reviews or Zentralblatt.

school: The analog of “organization”, for a thesis.

status: Typically used for notes such as “to appear” or “in preparation” with journal articles.

subtitle: Typically used with a multipart journal article to give a subtitle for each part.

translator: This needs no explanation, surely? Except perhaps to note that the standard Bib\TeX styles don’t provide it.


xid: This is used by a cross-referenced item to pass its identity to child entries that refer to it. It would not be necessary if Bib\TeX left the crossref field value accessible, but for some reason that I have not found yet (skimming in the source code) it is cleared internally before there is any opportunity to save it.

Practically speaking: For every crossref in your .bib files, the target should contain a matching xid field.
More on extra fields. In the Shelah bibliography, the author field is given without any accents in the author names, and the normal \TeX{} version of the author names is given in a separate field called trueauthor.

Also, for MR reviews:

\begin{verbatim}
review = {MR 48:3735},
\end{verbatim}

And for each author a country is indicated with the fromwhere field, e.g.,

\begin{verbatim}
fromwhere = {UK, IL},
\end{verbatim}

This means the first author is from the United Kingdom and the second one from Israel.

3 Macros for month names

\begin{verbatim}
MACRO {jan} {"-01"}
MACRO {feb} {"-02"}
MACRO {mar} {"-03"}
MACRO {apr} {"-04"}
MACRO {may} {"-05"}
MACRO {jun} {"-06"}
MACRO {jul} {"-07"}
MACRO {aug} {"-08"}
MACRO {sep} {"-09"}
MACRO {oct} {"-10"}
MACRO {nov} {"-11"}
MACRO {dec} {"-12"}
\end{verbatim}

Some scratch variables and global variables.

\begin{verbatim}
STRINGS { p s t l }
INTEGERS { len ptr }
\end{verbatim}

Note: Bib\TeX{} 0.99 requires a blank line in certain contexts, such as after the READ command, and will choke if it is missing. When it is necessary to add a blank line at the boundary of a macro code section we use a \texttt{\langle bst\rangle} marker.

Some utility functions.

\begin{verbatim}
FUNCTION {NOT} { { #0 } { #1 } if$ }
FUNCTION {AND} { 'skip$ { pop$ #0 } if$ }
FUNCTION {OR} { { pop$ #1 } 'skip$ if$ }
FUNCTION {TRUE} { #1 }
FUNCTION {FALSE} { #0 }
\end{verbatim}

\begin{verbatim}
in incr.ptr
\end{verbatim}

\begin{verbatim}
FUNCTION {incr.ptr} { ptr #1 + 'ptr := }
\end{verbatim}
3. MACROS FOR MONTH NAMES

current.char Returns: first character of STRING
FUNCTION {current.char} { ptr #1 substring$ }

copy.two.chars The function copy.two.chars appends the next two characters from s to STRING.
Arg: STRING (partial copy of pages string)
Returns: Modified version of STRING
Side effects: advances ptr
FUNCTION {copy.two.chars} { t * incr.ptr s current.char * incr.ptr }

is.digit
FUNCTION {is.digit} {
    chr.to.int$
    duplicate$
    "0" chr.to.int$ #1 ->
    swap$
    "9" chr.to.int$ #1 + <
    AND
}

is.lowercase.letter In a previous implementation the is.letter function first lowercased the character using change.case$, then tested it against the range a–z. But change.case$: issues a warning if it is applied to a lone brace character.
FUNCTION {is.lowercase.letter} {
    chr.to.int$ duplicate$
    "a" chr.to.int$ #1 ->
    swap$
    "z" chr.to.int$ #1 + <
    AND
}

is.uppercase.letter
FUNCTION {is.uppercase.letter} {
    chr.to.int$ duplicate$
    "A" chr.to.int$ #1 ->
    swap$
    "Z" chr.to.int$ #1 + <
    AND
}

is.letter
FUNCTION {is.letter} {
    duplicate$
    is.lowercase.letter
3. MACROS FOR MONTH NAMES

```lisp
{ pop$ TRUE }{ is.uppercase.letter } if$
}
```

**skip.accent** This implementation of `skip.accent` simply skips ahead one character whenever a backslash is found. This handles things like \\v, \\u, \\k, \r. Although this is overly simplistic it is still an improvement over the previous method which was to not even make the attempt. [mjd,2001-10-27]

```lisp
FUNCTION {skip.accent} { pop$ incr.ptr }
```

**strip.label**

```lisp
FUNCTION {strip.label} {
's :=
#1 'ptr :=
""
{ s ptr #1 substring$ duplicate$ empty$ NOT }
{ duplicate$ is.letter
 { * }
{ duplicate$ "\\" =
 { skip.accent }
 'pop$
 if$
 }
if$
 incr.ptr
}
while$
When the loop ends we have an extra empty-string on top of the stack to get rid of.
pop$
}
```

**sortify**

```lisp
FUNCTION {sortify} {
purify$ "l" change.case$
}
```

**lpad** Warning: The use of `text.length$` here restricts `lpad`'s use to strings that we know do not contain any special characters. Since we only use it for field names, this is ok.

```lisp
⟨string⟩ ⟨int⟩ lpad
```

```lisp
FUNCTION {lpad} {
swap$
```
3. MACROS FOR MONTH NAMES

\begin{verbatim}
'1 :=
 l text.length$ - 'len :=
 { len #0 > }
 { " " l * 'l :=
   len #1 - 'len :=
 } while$
 l

field.or.null

FUNCTION {field.or.null} {
 duplicate$ empty$
 { pop$ "" }
 'skip$ if$
}

missing.or.empty

FUNCTION {missing.or.empty} { duplicate$ missing$ swap$ empty$ OR }

append.ndash.and.skip.hyphens

The function append.ndash.and.skip.hyphens adds \textbackslash ndash to STRING when a hyphen is found and advances ptr to the next non-hyphen character in s.

Arg: STRING (partial copy of pages string)
Returns: modified version of STRING
Side effects: advances ptr

FUNCTION {append.ndash.and.skip.hyphens} {
 "\textbackslash ndash " *
 incr.ptr
 { s current.char "-" = }
 { incr.ptr }
 while$
}

n.dashify

In the n.dashify function we store the given string in s, push an empty string on the stack, and start examining the characters of s. For a non-hyphen character, we just append a copy of it to the top string. For a hyphen, we append \textbackslash ndash to the top string and advance the pointer until we reach a non-hyphen character. And there is one more exceptional case: for a backslash, we copy two characters instead of one. This keeps us from erroneously translating \textbackslash to \textbackslash ndash. One would scarcely expect to see an instance of \textbackslash in a page number field but let's face it, in actual use nearly anything can and does happen.

Arg: STRING (value of pages field)
Returns: STRING (dashified version of input string)
\end{verbatim}
3. MACROS FOR MONTH NAMES

FUNCTION \{n.dashify\} \{
  \texttt{'s :=}
  \#1 \texttt{'ptr := "}
  \texttt{}\{ s current.char \texttt{'t := t "" = NOT }\}
  \{ t \texttt{'"\ =}
    \{ copy.two.chars \}
    \{ t \texttt{'-\ =}
      \{ \texttt{append.ndash.and.skip.hyphens} \}
      \{ t \texttt{* incr.ptr } \}
      \texttt{if$ \}
    \}
  \}
  \texttt{if$ \}
  \texttt{while$ }\}

\texttt{missing.warning} Standard warning message for a missing or empty field. For the user we call any such field ‘missing’ without respect to the distinction made by BibTExX between missing and empty.

FUNCTION \{missing.warning\} \{
  \texttt{"missing " swap$ * " in " * cite$ * warning$ \}
\}

\texttt{string.length} Because BibTExX doesn’t provide a straightforward \texttt{string.length} function (\texttt{text.length$} counts “special characters” as a single character), it appears necessary to implement one the hard way.

INTEGERS \{ string.ptr \}

FUNCTION \{string.length\} \{
  \#1 \texttt{'string.ptr :=}
  \{ duplicate$ string.ptr \#1 substring$ "" = 'FALSE 'TRUE if$ \}
  \{ string.ptr \#1 + 'string.ptr := \}
  \texttt{while$ }\}
  \texttt{pop$ }
  string.ptr \#1 - \}

\texttt{format.title} FUNCTION \{format.title\}{
  duplicate$ 
  missing.or.empty 
  \{ pop$ "" \}
  \{ "t" change.case$ \}
  \texttt{if$ \}

3. MACROS FOR MONTH NAMES

start.field
FUNCTION {start.field} { #12 lpad "=" * write$ }

fin.field
FUNCTION {fin.field} { "}," write$ newline$ }

write.field
FUNCTION {write.field} { 
duplicate$ 
missing$ 
{ pop$ missing.warning } 
{ duplicate$ empty$ 
{ pop$ missing.warning } 
{ swap$ start.field write$ fin.field } 
if$ 
} 
if$ }

optional.field
FUNCTION {optional.field} { 
duplicate$ 
missing.or.empty 
{ pop$ pop$ } 
{ swap$ start.field write$ fin.field } 
if$ }

optional.title.field
FUNCTION {optional.title.field} { 
duplicate$ 
missing.or.empty 
{ pop$ pop$ } 
{ format.title swap$ start.field write$ fin.field } 
if$ }

optional.pages.field
FUNCTION {optional.pages.field} { 
duplicate$ 
missing.or.empty
3. MACROS FOR MONTH NAMES

{ pop$ pop$ }
{ swap$ start.field
  n.dashify
  write$ fin.field
  }
if$
}

optional.mr.field

FUNCTION {optional.mr.field} {
  duplicate$
  missing.or.empty
  { pop$ pop$ }
  {
    swap$ start.field
    "\MR(" swap$ "\)" * write$ fin.field
  }
  if$
}

remove.ordinal.suffix

FUNCTION {remove.ordinal.suffix} {
  's :=
  s string.length 'len :=
  #1 'ptr :=
  { ptr len < s ptr #1 substring$ is.digit AND }
  'incr.ptr
  while$
  s ptr global.max$ substring$ 'p :=
  p "st" =
  { TRUE }
  { p "nd" =
    { TRUE }
    { p "rd" =
      { TRUE }
      { p "th" =
        { TRUE }
      { FALSE }
      if$
    }
  if$
  }
  if$
  }
  if$
  { s #1 ptr #1 - substring$ }
}
4. Formatting author names and editor names

Take a name list in BibTeX form (names separated by the word “and”) and output the desired form of each name.

```
INTEGERS { nameptr numnames namesleft }
STRINGS { namelist fieldname }
```

The `format.name` function operates on a single name, producing a string of the form

```
von Last, First, Jr.
```

**Args:** `namelist`, `index` (top; integer)

**Returns:** formatted version of the `n`th name in `namelist` where integer `index` specifies `n`.

```
FUNCTION {format.name} { "\{\{vv\}\}\{ll\}\{\, ff\}\{\, jj\}\" format.name$ } (bst)
```

The function `optional.name.field` handles the task of splitting a multiple-name field value into multiple fields with single values.

**Args:** `fieldname`, `namelist` (top)

**Side effects:** writes a key/value pair to the output file for each name in `namelist`.

```
FUNCTION {optional.name.field}{
duplicate$ missing.or.empty
{ pop$ pop$ }
{ swap$ 'fieldname :=
duplicate$ num.names$
'namesleft :=
#1 'ptr :=
{ namesleft #0 > }
{ fieldname start.field
```
5. Handling year, month, date

Copy the name string before running `format.name` on it.

```verbatim
duplicate$ ptr format.name write$
fin.field
ptr #1 + 'ptr :=
namesleft #1 - 'namesleft :=
}
while$
```

At this point we have an extra copy of the name string on the stack.

```verbatim
pop$
if$
}
```

5 Handling year, month, date

`assemble.date.field` In the output we produce a `date` field instead of the year and month fields normally used in BibTeX files. In the date field we use ISO date notation (e.g., 1987-06-05) to facilitate switching between full and abbreviated month names. The month and day parts are frequently absent, making the date field equivalent to a year field.

```verbatim
FUNCTION {assemble.date.field}
{ date missing$
  { year missing.or.empty
    { status missing.or.empty
      { "No year or other date information for "
        cite$ * warning$ }
      'skip$
    if$
    "status"
  }
  { year month missing$ { "" } { month } if$ * }
  if$
  { date }
  if$
  if$
}
```

If the date string is now equal to “status”, it means that we have a status field or we already gave a warning about lack of date info; in either case omit the date field.

```verbatim
duplicate$ "status" =
{ pop$ pop$ }
{ swap$ start.field write$ fin.field }
if$
}
```
6Journal abbreviations

Use of journal abbreviations is recommended to make supplying ISSN numbers easier. To use this feature, you need a STRING definition of the form

@STRING{cpam="cpam/0010-3640/"
    
    
    #"Communications in Pure and Applied Mathematics"}

Then when you write

  journal=cpam,

exporting with amsxport will produce

  journal={cpam},
  ISSN={0010-3640},

The text before the ISSN number in the STRING definition is preferably a repetition of the abbreviation name (leaving expansion to be done on the \LaTeX side); or it could be the full journal name.

\textbf{Warning:} If you include braces and write \texttt{journal={cpam}}, \LaTeX{} will not expand the abbreviation but leave it as the field value; and then you will not get automatic lookup of the ISSN number.

\begin{verbatim}
optional.journal.field

FUNCTION {optional.journal.field} {
  duplicate$ missing.or.empty
  { pop$ pop$ }
  {
    's :=
    start.field
    #1 'ptr :=
    s current.char is.lowercase.letter
    {
      s "/" * 's :=
      { s ptr #1 substring$ "/" = NOT }
      { incr.ptr }
      while$
    }
    Journal name started with a lowercase letter, but we couldn’t find no slash? All right, just let it go through as it is.
    s ptr #1 + #1 substring$ empty$
    { s #1 ptr #1 - substring$ }
    But if we did find a slash, then we probably have found us an ISSN number that we can write out.
    {
      s #1 ptr #1 - substring$
      write$
      fin.field
    }
  }
}
\end{verbatim}
ISSNs are always nine characters in length (four digits, hyphen, four digits).

```
"ISSN" start.field
s ptr #1 + #9 substring$
}
if$
{ a }
if$
write$
fin.field
}
if$
}

7 Type info
optional.type.field
Putz around with the type info a little, for theses mainly. Two types here: the type field, and the entry type.

FUNCTION {optional.type.field}
{ duplicate$ missing.or.empty
  { type$ "mastersthesis" = { "Master’s Thesis" }
    { type$ "phdthesis" = { "Ph.D. Thesis" }
      { "" } if$ } if$
    swap$ pop$
  } 'skip$ if$
  { pop$ pop$ }
  { swap$ start.field write$ fin.field }
} if$
}

8 Miscellaneous tail-end information
url.note.status.review
The following items are common to all entry types are output at the tail end of the entry.

FUNCTION {url.note.status.review} {
 "url" url optional.field
 "note" note optional.field
 "status" status optional.field
The review field should perhaps be translated into multiple fields like author names, if more than one review is given.
 "review" review optional.field
}
Data from MathSciNet will have the Math Reviews number in an mrnumber
field. We assume that a given entry will have a review field or an mrnumber
field but not both.

"review" mrnumber optional.mr.field

9 Wrapper for each entry

start.entry

FUNCTION {start.entry} {
newline$
"\bib{" cite$ * }{" *
Merge Master’s thesis and Ph.D. thesis into a single type.

type$ "mastersthesis" = type$ "phdthesis" = OR
{ "thesis" }
{ type$ }
if$
* "}{" * write$
newline$
(*debug)
"sort.label" label sortify optional.field
"sort.key" sort.key$ optional.field
(/debug)
}

fin.entry

FUNCTION {fin.entry} {
"}" write$
newline$
}

10 Entry types

Here are the types of entries that are normally allowed in a Bib\TeX\ file:


booklet: A work that is printed and bound, but without a named publisher or
sponsoring institution.

inbook: A part of a book, which may be a chapter (or section or whatever)
and/or a range of pages.

incollection: A part of a book having its own title.


phdthesis: A PhD thesis.

proceedings: The proceedings of a conference.
10. ENTRY TYPES

**techreport**: A report published by a school or other institution, usually numbered within a series.

**article**: An article from a journal or magazine.

**inproceedings**: An article in a conference proceedings.

**conference**: An alias for **inproceedings**.

**unpublished**: A document having an author and title, but not formally published.

**misc**: Use this type when nothing else fits.

---

**article**  A journal article differs from an inproceedings article by not having booktitle, publisher, editor, and other such info.

FUNCTION {article} {
  start.entry
  "author" author optional.name.field
  "translator" translator optional.name.field
  "title" title format.title write.field
  "subtitle" subtitle optional.title.field
  "language" language optional.field
  "organization" organization optional.field
  "how" howpublished optional.field
  "date" assemble.date.field
  "ISSN" issn optional.field
  "journal" journal optional.journal.field
  "volume" volume optional.field
  "number" number optional.field
  "pages" pages optional.pages.field
  "PII" pii optional.field
  "archive" archive optional.field
  "eprint" eprint optional.field
  "preprint" preprint optional.field
  url.note.status.review
  fin.entry
}

---

**inproceedings**  An inproceedings entry may have xid, booktitle, meeting, publisher info; it is not expected to have journal, eprint, or preprint info.

FUNCTION {inproceedings} {
  start.entry
  "author" author optional.name.field
  "translator" translator optional.name.field
  "title" title format.title write.field
  "subtitle" subtitle optional.title.field
  "language" language optional.field
10. ENTRY TYPES

"organization" organization optional.field
"how" howpublished optional.field

Construct a date value from date, year, month fields
"date" assemble.date.field
"xid" xid optional.field

The following fields might be inherited from the parent of an article in a proceedings volume or collection.

"conference" meeting optional.field
"booktitle" booktitle optional.title.field

Include the edition in case this is an inbook entry.

"edition" edition optional.edition.field
"editor" editor optional.name.field
"series" series optional.field
"volume" volume optional.field
"publisher" publisher optional.field
"address" address optional.field
"pages" pages optional.pages.field
url.note.status.review
fin.entry
}

inbook
FUNCTION {inbook} { inproceedings }

incollection
FUNCTION {incollection} { inproceedings }

inproceedings
FUNCTION {conference} { inproceedings }

book The book type includes a meeting field because otherwise we’d have to repeat the entire definition for the proceedings type with that as the sole difference.
FUNCTION {book} {
start.entry
"author" author optional.name.field
"editor" editor optional.name.field
"translator" translator optional.name.field
"title" title missing$ { booktitle } { title } if$
format.title write.field
"subtitle" subtitle optional.title.field
"type" type optional.type.field
"language" language optional.field
"conference" meeting optional.field
"edition" edition optional.edition.field
"series" series optional.field
"publisher" publisher optional.field
organization missing.or.empty
  { "institution" institution optional.field }
  { "organization" organization optional.field }
if$
"address" address optional.field
"how" howpublished optional.field
"date" year write.field
"volume" volume optional.field
The number here is intended for a tech report.
"number" number optional.field
"ISBN" isbn optional.field
url.note.status.review
fin.entry
}

booklet
{booklet}
FUNCTION {booklet} { book }

manual
FUNCTION {manual} { book }

mastersthesis
FUNCTION {mastersthesis} { book }
FUNCTION {phdthesis} { book }
FUNCTION {proceedings} { book }
FUNCTION {collection} { book }
FUNCTION {techreport} { book }
FUNCTION {unpublished} { book }
FUNCTION {misc} { book }
FUNCTION {default.type} { misc }
(bst)
BibTeX 0.99 keels over if READ does not have a blank line after it.
(bst)
READ
(bst)
11 Sorting the entries

Since the final labels will be produced by the \texttt{amsrefs} package, we don’t need to worry about generating suffixes to disambiguate between equal stems. All we have to do is strive to generate stems that are identical to the ones that \texttt{amsrefs} will generate, so that \texttt{amsxport} will sort its output in a fashion that will be consistent with the labels.

Overall, this simplifies our job, since we don’t have to keep track of duplicate labels, so we can process each entry in isolation. However, we do have to be more careful about the handling of text accents and text symbols in order to maintain compatibility with \texttt{amsrefs}.

See \textit{(inter alia)} the sections “Lexical structure of names” and “Generating alphabetic labels” in the \texttt{amsrefs} implementation documentation for more information.

```plaintext
(*sort*)

\begin{verbatim}
chop.word
FUNCTION {chop.word} {
  's :=
  'len :=
  s #1 len substring$ =
  { s len #1 + global.max$ substring$ }
  's
  if$ }

sort.format.title
FUNCTION {sort.format.title} {
  't :=
  "A " #2
  "An " #3
  "The " #4 t chop.word
  chop.word
  chop.word
  sortify
  #1 global.max$ substring$
}

format.lab.names
(*alpha|short)
FUNCTION {format.lab.names} {
  's :=
  s num.names$ 'numnames :=
  numnames #1 >
  { numnames #4 >
    { #3 'namesleft := }
```
11. SORTING THE ENTRIES

{ numnames 'namesleft := }
if$
#1 'nameptr := 
"
{ namesleft #0 > }
{ nameptr numnames = 
 { s nameptr "{ff }{vv }{ll}{ jj}" format.name$ "others" =
 { "{\etalchar{+}}" * } 
 { s nameptr "{vv}{ll}{ jj}" format.name$ * } 
 if$
 }
 { s nameptr "{v vll}{ l}l}" format.name$ * }
if$
 nameptr #1 + 'nameptr :=
namesleft #1 - 'namesleft :=
}
while$
numnames #4 >
 { "{\etalchar{+}}" * }
 'skip$
if$
}
{ s #1 "{v vll}{ ll}" format.name$
duplicate$ text.length$ #2 <
(alpha) { pop$ s #1 "{ll}" format.name$ #3 text.prefix$ }
(short) { pop$ s #1 "{ll}" format.name$ #1 text.prefix$ }
 'skip$
if$
}
if$
}

FUNCTION {author.key.label}
{ author empty$
 { key empty$ 
 { cite$ #1 #3 substring$ } 
 { key #3 text.prefix$ }
 if$
 }
 { author format.lab.names }
 if$ 
}

FUNCTION {author.editor.key.label}
{ author empty$
 { editor empty$ 

11. SORTING THE ENTRIES

```lisp
{ key empty$
    { cite$ #1 #3 substring$ }
    { key #3 text.prefix$ }
    if$
}

{ editor format.lab.names }
  if$
  { author format.lab.names }
  if$
}

FUNCTION {author.key.organization.label}
{ author empty$
  { key empty$
    { organization empty$
      { cite$ #1 #3 substring$ }
      { "The " #4 organization chop.word #3 text.prefix$ }
      if$
    }
    { key #3 text.prefix$ }
    if$
  }
  { author format.lab.names }
  if$
}

FUNCTION {editor.key.organization.label}
{ editor empty$
  { key empty$
    { organization empty$
      { cite$ #1 #3 substring$ }
      { "The " #4 organization chop.word #3 text.prefix$ }
      if$
    }
    { key #3 text.prefix$ }
    if$
  }
  { editor format.lab.names }
  if$
}

FUNCTION {calc.label}
{ type$ "book" = type$ "inbook" = OR
  'author.editor.key.label
  { type$ "proceedings" =
```
11. SORTING THE ENTRIES

`editor.key.organization.label`
{ type$ "manual" =
  `author.key.organization.label`
  `author.key.label`
if$
}
if$
}
if$
strip.label
sortify
(*alpha)
year field.or.null
(*y2k) #3 #8 substring$
purify$ *
(*alpha)
'label :=
}
(*alpha|short)

sort.format.names

FUNCTION {sort.format.names} {

's :=
#1 'ptr :=
"

s num.names$ 'numnames :=
umnames 'namesleft :=
{ namesleft #0 > } 
{ ptr #1 >
  { " " " * }
  'skip$
if$
  s ptr "{vv{ } }{ll{ } }{ ff{ } }{ jj{ } }" format.name$ 't :=
  ptr numnames = t "others" = AND
  { "et al" }
  { t sortify }
  if$
  *
  ptr #1 + 'ptr :=
namesleft #1 - 'namesleft :=
}
while$
}

sort.warning

FUNCTION {sort.warning} {


"to sort, need " swap$ * " or key in " * cite$ * warning$ 
}

author.sort

FUNCTION {author.sort}
{ author empty$
{ key empty$
{ "author" sort.warning
"
}
{ key sortify }
if$
}
{ author sort.format.names }
if$
}

author.editor.sort

FUNCTION {author.editor.sort}
{ author empty$
{ editor empty$
{ key empty$
{ "author, editor," sort.warning
"
}
{ key sortify }
if$
}
{ editor sort.format.names }
if$
}
{ author sort.format.names }
if$
}

author.organization.sort

FUNCTION {author.organization.sort}
{ author empty$
{ organization empty$
{ key empty$
{ "author, organization," sort.warning
"
}
{ key sortify }
if$
}
11. SORTING THE ENTRIES

```
FUNCTION {editor.organization.sort}
{ editor empty$
  { organization empty$
    { key empty$
      { "editor, organization," sort.warning ""
        { key sortify }
        if$
      }
      { "The " #4 organization chop.word sortify }
      if$
    }
    { "The " #4 organization chop.word sortify }
    if$
  }
  } editor sort.format.names }
if$
}

FUNCTION {presort} {
  ⟨∗ alpha | short⟩
calc.label
label
 ⟨/alpha | short⟩
type$ "book" = type$ "inbook" = OR type$ "collection" = OR 
'author.editor.sort
{ type$ "proceedings" = 
'editor.organization.sort
{ type$ "manual" = 
'author.organization.sort
'author.sort
  if$
} if$
}
if$
⟨alpha | short⟩ *
" " *
⟨/alpha | short⟩ year field.or.null sortify *
" " *
```
12 Final pass for output

The `write.with.newlines` function stores a string in \texttt{s} and runs through it looking for occurrences of `^^M`; when one is found, the substring before it is written out with a newline, the remainder is left in \texttt{s}, and the cycle begins again.

\begin{verbatim}
FUNCTION {write.with.newlines}
{ 's := #1 'ptr :=
  { s ptr #2 + #1 substring$ "" = NOT }
  { s ptr #3 substring$ "^^M" =
    { s #1 ptr #1 - substring$ write$ newline$
      ptr #3 + 'ptr :=
      s ptr global.max$ substring$ 's :=
      #1 'ptr :=
    }
    { incr.ptr }
  if$
  while$
  s write$ newline$
}
\end{verbatim}

\begin{verbatim}
FUNCTION {begin.bib} {
  preamble$ empty$
  'skip$
  { preamble$ write.with.newlines } 
  if$
  "% \bib, bibdiv, biblist are defined by the amsrefs package."
  write$ newline$
  "\begin{bibdiv}" write$ newline$
  "\begin{biblist}" write$ newline$
}
\end{verbatim}

\begin{verbatim}
FUNCTION {end.bib} {
\}
13. Journal abbreviations

By putting the ISSN into the \LaTeX\ document, we make it easier to construct www queries from the bibliography data. These string definitions tie together journal abbreviations, ISSN numbers, and journal names.

These are the journals that are cited most frequently by American Mathematical Society authors at the present time (2000 CE).

The format used here is designed to make it easy for BibTeX to retrieve an ISSN number when given a journal abbreviation.

(*abbrevs)
@string{aa="aa/0065-1036/"  #"Acta Arithmetica"}
@string{actamath="actamath/0001-5962/"  #"Acta Mathematica"}
@string{asms="asms/0001-6969/"  #"Acta Scientiarum Mathematicarum"}
@string{advmath="advmath/0001-8708/"  #"Advances in Mathematics"}
@string{ajm="ajm/0002-9327/"  #"American Journal of Mathematics"}
@string{amm="amm/0002-9890/"  #"American Mathematical Monthly"}
@string{aifg="aifg/0373-0956/"  #"Annales de l’Institut Fourier"}
@string{am2="am2/0003-486X/Annals of Mathematics"}
@string{ap="ap/0091-1798/"  #"The Annals of Probability"}
@string{asens4="asens4/0012-9593/"  #"Annales Scientifiques de l’\'{E}cole Normale Sup\'{e}rieure"}
@string{amb="amb/0003-889X/Archiv der Mathematik"}
@string{arma="arma/0003-9527/"  #"Archive for Rational Mechanics and Analysis"}
@string{bamsn="bamsn/0273-0979/"  #"Bulletin (New Series) of the American Mathematical Society"}
@string{bams="bams/0004-9727/"
   "Bulletin of the Australian Mathematical Society"
@string{blms="blms/0024-6093/"
   "Bulletin of the London Mathematical Society"
@string{bsmf="bsmf/0037-9484/"
   "Bulletin de la Soci\'{e}t\'{e} Math\'{e}matique de France"
@string{craspi="craspi/0764-4442/"
   "Comptes Rendus de l'Acad\'{e}mie des Sciences (Paris)"
   " S\'{e}rie I Math\'{e}matique"
@string{cjm="cjm/0008-414X/Canadian Journal of Mathematics"
@string{cmb="cmb/0008-4395/"
   "Canadian Mathematical Bulletin"
@string{colloqmath="colloqmath/0010-1354/"
   "Colloquium Mathematicum"
@string{commalgebra="commalgebra/0092-7872/"
   "Communications in Algebra"
@string{cmp="cmp/0010-3616/"
   "Communications in Mathematical Physics"
@string{cpam="cpam/0010-3640/"
   "Communications on Pure and Applied Mathematics"
@string{cmh="cmh/0010-2571/"
   "Commentarii Mathematici Helvetici"
@string{cvta="cvta/0278-1077/"
   "Complex Variables"
@string{compositiomath="compositiomath/0010-437X/"
   "Compositio Mathematica"
@string{c="c/0010-485X/Computing"
@string{constrapprox="constrapprox/0176-4276/"
   "Constructive Approximation"
@string{dmj="dmj/0012-7094/"
   "Duke Mathematical Journal"
@string{eraams="eraams/1079-6762/"
   "Electronic Research Announcements"
   " of the American Mathematical Society"
@string{etds="etds/0143-3857/"
   "Ergodic Theory and Dynamical Systems"
@string{fm="fm/0016-2736/"
   "Fundamenta Mathematicae"
@string{gd="gd/0046-5755/"
   "Geometriae Dedicata"
@string{illinoisjmath="illinoisjmath/0019-2082/"
   "Illinois Journal of Mathematics"
@string{iiumj="iiumj/0022-2518/"
   "Indiana University Mathematics"
@string{im="im/0020-9910/"
   "Inventiones Mathematicae"}
@string{ma="ma/0025-5831/"
   "Mathematische Annalen"}
@string{mc="mc/0025-5718/"
   "Mathematics of Computation"}
@string{mj="mj/0025-5513/"
   "Mathematica Japonica"}
@string{mn="mn/0025-584X/Mathematische Nachrichten"}
@string{mpcps="mpcps/0305-0041/
   "Mathematical Proceedings of the"
   "Cambridge Philosophical Society"}
@string{mrl="mrl/1073-2780/
   "Mathematical Research Letters"}
@string{ms="ms/0025-5521/
   "Mathematica Scandinavica"}
@string{mathz="mathz/0025-5874/
   "Mathematische Zeitschrift"}
@string{m="m/0025-5793/
   "Mathematika"}
@string{mmj="mmj/0026-2285/
   "The Michigan Mathematical Journal"}
@string{nmj="nmj/0027-7630/
   "Nagoya Mathematical Journal"}
@string{na="na/0362-546X/Nonlinear Analysis"
@string{nm="nm/0029-599X/Numerische Mathematik"
@string{ojm="ojm/0030-6126/
   "Osaka Journal of Mathematics"
@string{pjm="pjm/0030-8730/
   "Pacific Journal of Mathematics"
@string{pams="pams/0002-9939/
   "Proceedings of the American Mathematical Society"
@string{pems2="pems2/0013-0915/
   "Proceedings of the Edinburgh Mathematical Society"
@string{pjaa="pjaa/0386-2194/
   "Proceedings of the Japan Academy"
@string{plms3="plms3/0024-6115/
   "Proceedings of the London Mathematical Society"
@string{qjmo2="qjmo2/0033-5606/
   "The Quarterly Journal of Mathematics"
@string{rmi="rmi/0213-2230/
   "Revista Matemática Iberoamericana"
@string{rmjm="rmjm/0035-7596/
   "Rocky Mountain Journal of Mathematics"
@string{sjam="sjam/0036-1399/
   "SIAM Journal on Applied Mathematics"
@string{sjc="sjc/0097-5397/
   "SIAM Journal on Computing"}
14 To Do

— When there is no author or editor info to create a label from: Use the initial letters of all the words in the title. Plus the year. Maybe year first.
— Add linelength and indent options to control the output?
— Discuss apacite "originalfoo" fields etc.
— Discuss Beebe’s work.
— Add bibliography.
— Add AUDIO, VIDEO entry types.
— Add a field for MR subject classification numbers and the like?
— Write a converter to convert from typical .bib data to preferred form. Have to go via perl or something to capture STRING def's and PREAMBLE and interspersed comments? Or emacs lisp? Provide .bst version as fallback.
— Alpha labels: add numbers after sorting? subscript option? L3Y2a option.
— Test multi-author articles with ten-plus authors. What happens with the alpha labels then?
— For url field especially, check length and prebreak by hand instead of relying on BibTeX’s slapdash stick-in-a-percent-at-column-72 regardless of where it happens to fall.
— How about a general ‘contributor’ field.
— Test with a wimpy older version of BibTeX.

Index

Numbers written in italic refer to the page where the corresponding entry is described; numbers underlined refer to the definition; numbers in roman refer to the pages where the entry is used.

\textbf{Symbols} \quad \^ \quad 26–29 \quad \texttt{.bib} \quad 3
\quad \texttt{\^} \quad 6, 8, 28