NAME

cattobib − convert Z39.50 library catalog server data to BibTeX markup

SYNOPSIS

cattobib [**−?**] [**−author**] [**−by***xxx*] [**−CODEN**] [**−debug**] [**−editor**] [**−help**] [**−initfile** *alternate-alias-file***]** [**−ISBN**] [**−ISSN**] [**−ISSN-L**] [**−keep-files**] [**−LCCN**] [**−logfile** *filename***]** [**−no-USMARC**] [**−publisher**] [**−quiet**] [**−series**] [**−server** *name-or-path***]** [**−test**] [**−title**] [**−USMARC**] [**−version**] [**−volume**] [**−year** *year***]** *search-key-1 search-key-2 search-key-3 ... > BIBTEX-file*

DESCRIPTION

cattobib converts Z39.50 library-catalog server data to BIBTEX markup, using one or more search keys provided on the command line. That allows convenient re-use of publication data, and eases the tedious and error-prone task of creating BIBTEX entries for books and other cataloged publications.

The library catalog server can be specified by a command-line option, with the default server being the world's largest library catalog, the US Library of Congress.

ANSI/NISO Standard Z39.50-1995 and ISO Standard 23950:1998 ''Information and documentation — Information retrieval (Z39.50) — Application service definition and protocol specification'' define a library catalog protocol that allows client programs to communicate with library catalog servers around the world, and retrieve data in a small number of different formats, notably USMARC (*United States MAchine-Readable Cataloging*) and SUTRS (*Simple Unstructured Text Record Syntax*).

OPTIONS

Command-line options may be abbreviated to a unique leading prefix, and may begin with either one or two leading hyphens. Uppercase options may also be spelled in lowercase.

−? Give a brief help message on *stdout*, and exit immediately with a successful status code.

−author
Restrict search-key matching to author fields.

−by*xxx* Pass that sort-order option to **bibsort**(1). The suffix *xxx* is one of *day*, *label*, *number*, *pages*, *seriesvolume*, *volume*, or *year*, or any other suffix supported by future versions of that program.

−CODEN
Restrict search-key matching to CODEN (Chemical Abstracts periodical number) fields.

−debug Display on *stderr* the commands to be sent to each Z39.50 catalog server immediately before contacting that server. Display the server session as well on *stderr* when possible, and otherwise, log it to a temporary file whose name is reported on *stdout*.

−editor Restrict search-key matching to editor fields.

−help Give a help message on *stdout* describing the options and known Z39.50 servers, and exit immediately with a successful status code.

−initfile *filename*
Specify the name of an alternate initialization file that is to be used instead of the default personal file, *$HOME/.cattobibrc*. If the specified file is not readable or does not exist, the option is ignored.

−ISBN Restrict search-key matching to ISBN (International Standard Book Number) fields.

Because of its frequency of use, the option may be abbreviated to a single letter, even though it shares a two-character prefix with other options.

−ISSN Restrict search-key matching to ISSN (International Standard Serial Number) fields.

−ISSN-L
Restrict search-key matching to ISSN-L (linking International Standard Serial Number) fields.

−keep-files
Preserve intermediate scratch files in */tmp* (or wherever the environment variable *TMPDIR* points).

They are named *cattobib.bib.nnn* (raw BibTeX data before several cleanup steps), *cattobib.fifo.nnn* (raw data from Z39.50 server for the last item searched), *cattobib.rc.nnn* (reduced combined initialization file), and *cattobib.label.nnn* (citation-label substitution file), where *nnn* is a random-number suffix. Normally, those files are not of interest and are deleted on exit, unless that option is specified.

−LCCN
Restrict search-key matching to LCCN (US Library of Congress call number) fields. The data format is library dependent, so searches with values *QA 273*, *QA.273*, and *QA273*, may each return different BibTeX entries.

−logfile *filename*
Log the output on the specified filename, which must be a new file, instead of on *stdout*.

−max *number*
Set the maximum number of entries allowed from any single search. This is useful for exploratory searching with author, LCCN, and title strings to avoid excessive output when the matches are too liberal. [Default: 10]

−no-USMARC
Suppress output of unrecognized USMARC catalog records, because the unrecognized ones rarely contain additional information that is useful to record in BibTeX entries.

−publisher
Restrict search-key matching to a given publisher name.

−quiet Suppress search status messages.

−series Restrict search-key matching to a given book series.

−server *names-or-paths*
Specify a list of one or Z39.50 catalog servers. The *names-or-paths* value is either a space-separated list of paths to particular Z39.50 servers, usually in the form *hostname:portnumber/databasename*, or abbreviations for such servers, as shown below. A regularly-updated directory of Z39.50 servers can be found on the Web at

```
http://www.indexdata.dk/targettest/
```

The option name may be abbreviated to a single letter.

The option can be specified as many times as needed, and all specified servers are accumulated into a master list that is searched on completion of command-line processing.

The special server name *home* means *all* of the aliases in the user-specific file *$HOME/.cattobib.rc*. Similarly, the special server name *local* means *all* of the aliases in the local system-wide file */usr/local/share/cattobib/cattobib-0.10/cattobib.rc*. Any of the aliases in those files can also be used individually in the **−server** option. See the section **INITIALIZATION FILES** for more about such files.

In this list, vertical bars separate alternatives, and asterisk matches any word with that prefix:

```
ALL | A*                All Z39.50 servers known to cattobib
NATIONAL | N*           National libraries and union catalogs
alberta | ab            University of Alberta
amherst | umass         University of Massachusetts, Amherst
amicus | ca             National Library of Canada
anu                     Australian National University
be | ulb                Université Libre de Bruxelles, Belgium
bibsys                  Norwegian Union Catalog
bne | es                National Library of Spain
bnp | pt                National Library of Portugal
boulder | co           University of Colorado, Boulder
```

british | br	British Library
byu	Brigham Young University
calgary	University of Calgary
caltech	California Institute of Technology
carnegie | cmu	Carnegie Mellon University
chicago	University of Chicago
columbia | cu	Columbia University
congress | lc | loc	US Library of Congress
copac | uk	COPAC (union of 24 research-university catalogs in the UK and Ireland)
cosmos	Danish National Library of Science & Medicine
crl	Center for Research Libraries
dartmouth	Dartmouth College, NH
denmark | dk	Royal Library of Denmark
dsb | dsl	Danish State Library
duke	Duke University
edinburgh | ed	Edinburgh University
emory	Emory University
eu	European University Institute Library
florida | fl	Florida Center for Library Automation
gbv	German Union Catalog
gmu	George Mason University
harvard	Harvard University
hopkins | jhu	The Johns Hopkins University
indiana | iu	Indiana University
indystate | in	Indiana State University Consortium
kings | kcl	King’s College (London)
ku-leuven | ku	Katholieke Universiteit Leuven, Belgium
madrid	Universidad Autonoma de Madrid, Spain
marriott | utah | ut	University of Utah Marriott Library
mcgill	McGill University
melbourne	University of Melbourne
melvyl | cal	University of California
michigan | mi	University of Michigan
minn* | mn	University of Minnesota
mit	Massachusetts Institute of Technology
montreal | um	Université de Montréal
nbi | bohr	Niels Bohr Institut
newyork | ny	New York University
nla | au	National Library of Australia
nlm | nih	National Library of Medicine (US)
nlnz | nz	National Library of New Zealand
nls | scotland	National Library of Scotland
nlw | cwm | wales	National Library of Wales
northwestern | nw	Northwestern University
norway | no	National Library of Norway
nsw | unsw	University of New South Wales
nus | sg	National University of Singapore
odense | sdu	University of Southern Denmark
oregon | uo	University of Oregon
oxford | ox*	Oxford University
pennstate | psu | pa	Pennsylvania State University
poland | pl	National Library of Poland

```
princeton               Princeton University
quebec | uq             Université de Québec
rlg                     Research Libraries Group
rutgers                 Rutgers University
sfu                     Simon Fraser University
sudoc | abes | fr       French Union Catalog
sweden | se             National Library of Sweden
stanford | su           Stanford University
stockholm               Stockholm University
tamu                    Texas A&M University
texas | tx              University of Texas at Austin
toronto                 University of Toronto
trinity | tcd           Trinity College, Dublin
tub | berlin            Technische Universität Berlin, Germany
tud | darmstadt         Technische Universität Darmstadt, Germany
tufts                   Tufts University
ub | bern               Universität Bern, Switzerland
ucc | cork              University College Cork, Ireland
ucd | dublin            University College Dublin, Ireland
ucsf                    University of California, San Francisco
upenn | penn            University of Pennsylvania
usc                     University of Southern California
uta                     University of Texas, Arlington
uwo                     University of Western Ontario
vanderbilt              Vanderbilt University
victoria | vu           Victoria University, Melbourne, Australia
westpoint | usma        United States Military Academy West Point
witwatersrand | wit     University of Witwatersrand, Johannesburg, South Africa
wustl                   Washington University St. Louis
yale                    Yale University
```

A later section provides information about representing accented characters in searches of the catalog of the National Library of Poland.

−test Run in test mode: library-catalog data is supplied on *stdin*, instead of being fetched from a Z39.50 catalog server. That option is primarily intended for the installation-time validation test suite, but can be also use for local testing and tuning of the format-conversion software.

−title Restrict search-key matching to title fields.

−USMARC
Include unrecognized USMARC catalog data in additional fields in the output BIBTEX entries. [Default]

−version
Display the version number and revision date on *stdout*, and exit immediately with a successful status code.

The option name may be abbreviated to a single letter.

−volume
Search for a series and volume, where the search key consists of a series name and a volume number, separated by one or more nonalphanumeric, nonhyphen, nonspace characters.

−year *year*
Limit searches to just the specified publication year. This option, when specified, must come *before* other search options; otherwise, it has no effect.

EXAMPLES

Search the default Z39.50 server for a book by its ISBN:

```
% cattobib 1-57586-011-2
%% Searching [z3950.loc.gov:7090/Voyager] for [1575860112]: flags = [@attr 1=7]
@Book{Knuth:1999:DT,
  author =       "Donald Ervin Knuth",
  title =        "Digital typography",
  volume =       "78",
  publisher =    "CSLI Publications",
  address =      "Stanford, Calif.",
  pages =        "xv + 685",
  year =         "1999",
  ISBN =         "1-57586-011-2 (cloth), 1-57586-010-4 (paperback)",
  ISBN-13 =      "978-1-57586-011-4 (cloth), 978-1-57586-010-7 (paperback)",
  LCCN =         "Z249.3 .K59 1999",
  bibdate =      "Wed Jun 22 18:49:36 2005",
  bibsource =    "z3950.loc.gov:7090/Voyager",
  series =       "CSLI lecture notes",
  URL =          "ftp://uiarchive.cso.uiuc.edu/pub/etext/gutenberg/;
                 http://www.loc.gov/catdir/description/cam029/98027331.html;
                 http://www.loc.gov/catdir/toc/cam022/98027331.html",
  acknowledgement = ack-nhfb,
  subject =      "Printing; Data processing; Computerized typesetting;
                 Computer fonts; TeX (Computer file); METAFONT",
}
```

Remark: The ISBN is a *unique* identifier assigned to books published throughout the world since about 1972. It consists of ten decimal digits, the last of which may also be the letter X, divided into four hyphen- (or rarely, space-) separated parts: country or language, publisher, book number within the publisher, and a final check digit that can be used to detect invalid ISBNs.

Country/language groups 0 and 1 are English, 2 is French, 3 is German, 4 is Japanese, 5 is Russian, and so on. The Republic of Srpska (1996 population about 1.4 million people) is 99938.

Large publishers have small numbers (e.g., Collins is 00, McGraw-Hill is 07, and Prentice-Hall is 13), and small publishers have big numbers (e.g., Peachpit Press is 938151 and Personal TEX is 9631044).

When a publisher exhausts its range of book numbers, it gets a new publisher number: for example, O'Reilly Media Inc. now has publisher numbers 937175, 56592, 4493, and 596. Each of those steps allows a ten-fold change in the number of possible book numbers.

Because the 10-digit ISBN numbers are rapidly being exhausted, effective 1-Jan-2007, they are no longer issued, and instead are replaced by new 13-digit values based on the *European Article Numbering* (EAN) system. The name for the new system is ISBN-13, and such values are also EAN values.

From version 0.02, **cattobib** output includes both ISBN(-10) and ISBN-13 data, because the latter are now found in many online bookstore and library catalogs, and many publishers now print them both with the back-cover bar code.

ISBN-13 translations of ISBN-10 data are handled automatically by the **biborder**(1) utility, and consist of the prefix `978-`, followed by the first nine digits of the ISBN-10 value with the same (optional) hyphenation as before, followed by a hyphen and a new check digit. The latter is computed by a different algorithm, and does not in general match the tenth digit (the check digit) of the ISBN-10 value.

ISBN-13 values can also begin with `979-`, but they are still rare, and do not have ISBN-10 equivalents. They are needed when a publisher exhausts its assigned book-number range(s) in the `978-` group, and no free ranges are available elsewhere from the assignment authority.

Search the default Z39.50 server for a book by its title:

```
% cattobib --title 'Digital Typography Sourcebook'
%% Searching [z3950.loc.gov:7090/Voyager] for [Digital Typography Sourcebook]: flags = []
@Book{Bryan:1996:DTS,
  author =       "Marvin Bryan",
  title =        "The digital typography sourcebook",
  publisher =    "Wiley",
  address =      "New York",
  pages =        "xxiv + 384, 3",
  year =         "1996",
  ISBN =         "0-471-14811-3 (paper/CD-ROM)",
  ISBN-13 =      "978-0-471-14811-1",
  LCCN =         "Z250.7 .B79 1996",
  bibdate =      "Wed Jun 22 18:49:36 2005",
  bibsource =    "z3950.loc.gov:7090/Voyager",
  URL =          "ftp://uiarchive.cso.uiuc.edu/pub/etext/gutenberg/;
                 http://www.loc.gov/catdir/bios/wiley047/96013161.html;
                 http://www.loc.gov/catdir/description/wiley033/96013161.html;
                 http://www.loc.gov/catdir/toc/onix04/96013161.html",
  acknowledgement = ack-nhfb,
  subject =      "Computer fonts",
}
```

Search the British Library for the same book:

```
% cattobib --server br --title 'Digital Typography Sourcebook'
%% Searching [z3950cat.bl.uk:9909/BLAC] for [Digital Typography Sourcebook]: flags = []
%% IGNORED:  Number of hits: 1, setno 1
...
@Book{Bryan:1997:DTS,
  author =       "Marvin Bryan",
  title =        "The digital typography sourcebook",
  publisher =    "Wiley",
  address =      "New York ; Chichester",
  pages =        "xxiv + 384",
  year =         "1997",
  ISBN =         "0-471-14811-3 (paperback)",
  ISBN-13 =      "978-0-471-14811-1",
  bibdate =      "Wed Jun 22 18:49:36 2005",
  acknowledgement = ack-nhfb,
  subject =      "Computer fonts",
}
```

Search the National Library of Australia for two books by ISBN:

```
% cattobib -q --server au --ISBN 0-06-621285-5 0-19-860702-4
@Book{Winchester:2003:KDW,
  author =       "Simon Winchester",
  title =        "Krakatoa: the day the world exploded, 27 August 1883",
  publisher =    "HarperCollins Publishers",
  address =      "New York",
  pages =        "xvi + 416",
  year =         "2003",
  ISBN =         "0-06-621285-5",
  ISBN-13 =      "978-0-06-621285-2",
  bibdate =      "Wed Jun 22 18:49:36 2005",
  bibsource =    "catalogue.nla.gov.au:7090/Voyager",
```

```
  acknowledgement = ack-nhfb,
  remark =       "Includes bibliographical references and index.",
  subject =      "Natural disasters; Indonesia; Krakatoa; Social
                 aspects; Volcanoes; Indonesia; Krakatoa; Krakatoa
                 (Indonesia); Eruption, 1883",
  usmarc-019 =   "019 1 $a 24669279",
  usmarc-043 =   "043 $a a-io---",
  usmarc-250 =   "250 $a 1st U.S. ed.",
  usmarc-984 =   "984 $a ANL $c YY 551.2109598 W759",
}

@Book{Winchester:2003:MES,
  author =       "Simon Winchester",
  title =        "The meaning of everything: the story of the Oxford
                 English Dictionary",
  publisher =    "Oxford University Press",
  address =      "Oxford",
  pages =        "xxv + 260",
  year =         "2003",
  ISBN =         "0-19-860702-4 (hbk.), 0-19-860702-4 (hbk.)",
  ISBN-13 =      "978-0-19-860702-1 (hbk.), 978-0-19-860702-1 (hbk.)",
  bibdate =      "Wed Jun 22 18:49:36 2005",
  bibsource =    "catalogue.nla.gov.au:7090/Voyager",
  price =        "No price",
  acknowledgement = ack-nhfb,
  remark =       "Includes ndex.",
  subject =      "Oxford English dictionary; Lexicology; History",
  usmarc-019 =   "019 1 $a 25073662",
}
```

SEARCHING THE NATIONAL LIBRARY OF POLAND

The Polish language uses 22 accented letters that are not available in 7-bit ASCII or its 8-bit ISO 8859-1 extension used for most Western European languages. The Z39.50 output from the National Library of Poland uses the ISO 6937-2 character set, which is described in a character map available on the Web at

`ftp://dkuug.dk/i18n/charmaps/117`

cattobib handles translation to TEX of just the parts of that character set that are needed for the Polish accented letters. Input search strings are, however, not in any standard encoding, but instead require an awkward and idiosyncratic representation of the 22 accented letters:

```
{834}A          LATIN CAPITAL LETTER A WITH ACUTE
{834}C          LATIN CAPITAL LETTER C WITH ACUTE
{834}E          LATIN CAPITAL LETTER E WITH ACUTE
{834}N          LATIN CAPITAL LETTER N WITH ACUTE
{834}O          LATIN CAPITAL LETTER O WITH ACUTE
{834}S          LATIN CAPITAL LETTER S WITH ACUTE
{834}Z          LATIN CAPITAL LETTER Z WITH ACUTE
{834}a          LATIN SMALL LETTER A WITH ACUTE
{834}c          LATIN SMALL LETTER C WITH ACUTE
{834}e          LATIN SMALL LETTER E WITH ACUTE
{834}n          LATIN SMALL LETTER N WITH ACUTE
{834}o          LATIN SMALL LETTER O WITH ACUTE
{834}s          LATIN SMALL LETTER S WITH ACUTE
{834}z          LATIN SMALL LETTER Z WITH ACUTE
{839}Z          LATIN CAPITAL LETTER Z WITH DOT ABOVE
{839}z          LATIN SMALL LETTER Z WITH DOT ABOVE
```

```
{846}A          LATIN CAPITAL LETTER A WITH OGONEK
{846}E          LATIN CAPITAL LETTER E WITH OGONEK
{846}a          LATIN SMALL LETTER A WITH OGONEK
{846}e          LATIN SMALL LETTER E WITH OGONEK
{888}           LATIN CAPITAL LETTER L WITH STROKE
{888}           LATIN SMALL LETTER L WITH STROKE
```

Notice that the *same* input encoding is used for both lowercase and uppercase l-with-stroke. The prefix `{834}` represents the acute accent, `{839}` the dot accent, and `{846}` the ogonek (a hook accent attached near the lower right corner of the letter). Pictures of all of the Polish accented letters are available on the Web at

```
http://www.eki.ee/letter/chardata.cgi?lang=pl+Polish&script=latin
```

Thus, to search for the author name represented in TEX as `Bie{\'n}`, use the command

```
cattobib --server pl --author "Bie{834}n"
```

For the title represented in TEX as `Wi{\k{e}}{\'z}niowie Moskwy`, use the command

```
cattobib --server pl --title "Wi{846}e{834}zniowie Moskwy"
```

It would of course be much easier for users to allow matches of unaccented letters with accented ones, but that feature is not supported by the library catalog Z39.50 server. Instead, **cattobib** provides a convenient alternative: TEX markup for the Polish accented letters is silently translated to the form needed for the National Library of Poland. You can then write the sample search commands as:

```
cattobib --server pl --author "Bie{\'n}"
cattobib --server pl --title "Wi{\k{e}}{\'z}niowie Moskwy"
```

Outer braces surrounding accented letters may be omitted: both `{\k{a}}` and `\k{a}` are recognized, as are `{\'z}`, `\'z`, `{\.z}`, `\.z`, and so on.

INITIALIZATION FILES

cattobib supports two initialization files to provide additional short aliases for Z39.50 catalog server names: a user-specific file *$HOME/.cattobibrc* and a system-wide file *@SHRLIBDIR@/cattobib.rc*. The format of such files is simple:

- Optional comments run from sharp to end of line, and are discarded first.
- Long lines may be continued by a backslash at end of line; the backslash and newline are removed, and thus, may be embedded in a name if that is useful.
- lines of the form `alias name v1 v2 . . . vk` define `name` to be a possibly-empty white-space-separated list of values. Each value is normally a Z39.50 server name, such as `z3950.loc.gov:7090/Voyager`, but may also be a previously-defined alias whose value is to be substituted for that alias.
- All other lines are silently ignored.

Here is a sample file to illustrate the syntax, with short uppercase names in place of long Z39.50 server names:

```
### Test file for initialization file preprocessing

### Start with some basic definitions

alias one       ONE                     # comment
alias two       TWO                     # comment
alias three     THREE                   # comment
alias four      FOUR                    # comment
alias five      FIVE                    # comment
alias six       SIX                     # comment
alias seven     SEVEN                   # comment
alias eight     EIGHT                   # comment
alias nine      NINE                    # comment
```

```
alias ten       TEN                     # comment

### redefine an alias name
alias   three   UNO \
                DOS \
                TRES                    # comment

alias v3        three

### undefine an alias name
alias three                             # comment

alias v4_5      three FOUR FIVE         # comment

alias nine_ten  NINE TEN                # comment

### show line continuation: backslash-newline disappears,
### and thus, may appear in the middle of a name
alias v6_10     six \
                seven \
                eight \
                nine_\
ten                                     # comment

alias v_even    two four six eight ten
alias v_odd     one three five seven nine
```

cattobib reduces that file by discarding comments, joining wrapped lines, and expanding aliases to produce a temporary file that looks like this:

```
alias   one             ONE
alias   two             TWO
alias   three           THREE
alias   four            FOUR
alias   five            FIVE
alias   six             SIX
alias   seven           SEVEN
alias   eight           EIGHT
alias   nine            NINE
alias   ten             TEN
alias   three           UNO DOS TRES
alias   v3              UNO DOS TRES
alias   three
alias   v4_5            FOUR FIVE
alias   nine_ten        NINE TEN
alias   v6_10           SIX SEVEN EIGHT NINE TEN
alias   v_even          TWO FOUR SIX EIGHT TEN
alias   v_odd           ONE FIVE SEVEN NINE
```

There are no restrictions on what characters may occur in the whitespace-separated words, except that sharp cannot survive the reduction, because it always starts a comment that is removed. No special marker, such as the Unix shell's dollar sign, is needed to request expansion; the number of alias names is likely to be small enough that no conflicts are likely.

Here is a fragment of an initialization file that shows the convenience of aliases of aliases, and alias expansion:

```
# Z39.50 catalogs of the eight members of the Ivy League
alias brown     # no known Z39.50 server
alias columbia  clio-db.cc.columbia.edu:7090/Voyager
alias dartmouth catalog-lib.dartmouth.edu:210/innopac
alias harvard   z3950s://navigator.fas.harvard.edu/boston
alias mit       library.mit.edu:9909/mit01
alias princeton catalog.princeton.edu:7090/voyager
alias upenn     libdb.lib.upenn.edu:7090/voyager
alias yale      prodorbis.library.yale.edu:7090/voyager

# alternate short abbreviations:
alias dar       dartmouth
alias pen       upenn
alias pri       princeton
alias har       harvard
alias col       columbia

# all of the Ivy League Z39.50 university catalogs
alias ivy       brown columbia dartmouth harvard mit princeton upenn yale

# large universities in Utah
alias byu       catalog.lib.byu.edu:2200
alias usu       ht02aggies.ser321.usu.edu:20003/OPAC
alias utah      hip.library.utah.edu:210/horizon

alias ut-all    byu utah usu
```

Each word in the value list is looked up *just once* in the table of already-defined aliases. The substituted value is *not* scanned for further aliases, so there is no possibility of an infinite loop during alias substitution.

BUGS

No matter which server is selected, library-catalog data tends to be rife with errors like these:

- completely wrong author lists;
- duplicated records, sometimes with minor variations;
- faulty title capitalization;
- incomplete, inaccurate, or missing page numbers;
- incorrect author order;
- mangled and missing accents;
- off-by-one copyright years;
- truncated author lists and titles;
- . . .

The best advice to the user is to search three or more catalogs for the same data, and then merge the results, using a majority vote to resolve discrepancies.

When multiple catalogs provide the same data, it may indicate that the data are likely to be reliable. However, the user is warned that libraries around the world share cataloging data, so there may not be as much data independence as might appear from geographically-distant catalogs.

While the conversion of USMARC and SUTRS markup to BIBTEX works reasonably well, there are many catalog record types that are not converted. When they are known not to be useful in BIBTEX entries, they are silently discarded. Otherwise, **cattobib** preserves them as additional key/value pairs, such as the *usmarc-nnn* keys in the BIBTEX output in the **EXAMPLES** section, or else complains about them in diagnostic messages.

cattobib produces only BIBTEX `@Book{...}` entries, even for conference proceedings, for which a `@Proceedings{...}` entry is required. Library catalog information often does not distinguish between those document types, so the user must convert such entries.

A certain amount of manual cleanup of the BIBTEX output is almost always necessary.

ENVIRONMENT VARIABLES

TESTSHRLIBDIR Directory where format-conversion software is stored. That variable is primarily intended for the installation-time validation test suite, but can also be used for testing alternate versions of the software.

TMPDIR Directory where temporary files are stored (default: */tmp*).

SEE ALSO

bibclean(1), **bibjoin**(1), **biblabel**(1), **biborder**(1), **bibsort**(1), **bibtex**(1), **citesub**(1), **yaz-client**(1).

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WWW URL: `http://www.math.utah.edu/~beebe`