

Bibliography conversion from Bib \TeX format to AMSBIB format

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When preparing manuscripts for publication in the vast majority (more than 150) of Russian mathematical journals, the [Math-Net.Ru](#) portal recommends that the bibliography be formatted in the [AMSBIB](#).

If references to publications in Russian-language journals indexed in Math-Net.Ru, there is no particular problem since the corresponding bibliographic records in the AMSBIB format can be copied from the corresponding pages of publications on the site [Math-Net.Ru](#). The situation is worse with references to English-language publications, most of which are not indexed on the Math-Net.Ru site, and for which, accordingly, bibliographic information in the AMSBIB format, as a rule, is not available. In this case, one has to manually compile the corresponding bibliographic records in the AMSBIB format, using widely available ones (for example, on the site [MR Lookup](#), on journal sites, or on numerous bibliographic Internet services) corresponding bibliographic records in Bib \TeX format.

Unfortunately, there is no one-to-one correspondence between the fields of bibliographic records in the AMSBIB and Bib \TeX formats, so the process of translating records from one format to another becomes “creative”. If such a procedure is required to be done for one or two publications, there are no special problems. But when it is necessary to translate a sufficiently large number of bibliographic records from the Bib \TeX format into AMSBIB (for example, when preparing a review or monograph), the task becomes unpleasant, not to mention the fact that manual translation is fraught with a large number of errors, and is also highly dependent on from the “creativity” of a particular author.

To simplify and unify the process of converting bibliography from the Bib \TeX format to the AMSBIB format, I created `amsbib.bst` and `amsbibs.bst` style files that perform this conversion automatically. Moreover, the first of these style files creates a list of AMSBIB bibliographic records in the order of citation of publications in the work, and the second one in alphabetical order.

An example of such a transformation is given in the listing below, and its result is at the end of this work:

Fragment of the example tex-file

```
1 \documentclass[a4paper]{article}
2 \usepackage[T1,T2A]{fontenc}
3 \usepackage[utf8]{inputenc}
4 \usepackage[english,russian]{babel}
5 \usepackage{amsmath,amssymb}
6 \usepackage[hyper]{amsbib}
7 .....
8 .....additional preamble stuff.....
9 .....
10 \title{...}
11 \author{...}
12
```

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```

13 \begin{document}
14 \maketitle
15 .....
16 .....publication text.....
17 .....
18 \nocite{*}
19
20 \bibliographystyle{amsbib}
21 \bibliography{example}
22 \end{document}

```

In this case, the bibliography itself (created using the `amsbib.sty` package) is both inserted into the pdf file created during the translation of the tex file, and placed into the `<file name>.bbl` file generated during the translation tex file.

We emphasize that both the bibliography file `.bib` and the tex-file using it must be in the same encoding. For example, in this work, `utf8` encoding was used. In the case of `cp866` or `cp1251` encodings, the `bibtex8` program should be used to process the bibliography, and when `utf8` encoding is used, the `bibtexu` program should be used.

The proposed style files `amsbib.bst` and `amsbibs.bst` are far from being perfect, they are only the first attempt in this direction. Therefore, **it is recommended that the resulting list of bibliographic records in AMSBIB format be carefully checked and, if necessary, corrected manually.**

Style files `amsbib.bst` and `amsbibs.bst`, and example files `example.tex` and `example_en.tex` can be downloaded from [BibTeX to AMSBIB](https://kozyakin.github.io) of my GitHub Pages repository kozyakin.github.io. The files of the AMSBIB package (`amsbib.sty` + `*.pdf`) required for translating examples are borrowed from [amsbib.zip](#).

The following is an excerpt from the bibliography database `amsbib.bib` in the BibTeX format used in this example:

Fragment of the BibTeX database `amsbib.bib`

```

@ARTICLE{BKK:IEEETNN96,
  author      = "Bhaya, Amit and Kaszkurewicz, Eugenius and Kozyakin, V. S.",
  title       = "Existence and stability of a unique equilibrium in
                continuous-valued discrete-time asynchronous {H}opfield
                neural networks",
  journal      = "IEEE Trans. Neural Netw.",
  fjournal     = "IEEE Transactions on Neural Networks",
  year        = "1996",
  volume      = "7",
  number      = "3",
  pages       = "620--628",
  month       = "may",
  issn        = "1045-9227",
  doi         = "10.1109/72.501720",
  url         = "https://ieeexplore.ieee.org/document/501720",
  language    = "english",
}

@ARTICLE{ChadKra:APM2:97,
  author      = "Ch{\k{a}}dzy{\n}ski, Jacek and Krasi{\n}ski, Tadeusz",
  title       = "A set on which the {{\L}}ojasiewicz exponent at infinity is
                attained",
  journal      = "Ann. Polon. Math.",
  fjournal     = "Annales Polonici Mathematici",
  year        = "1997",

```

```

volume      = "67",
number      = "2",
pages       = "191--197",
eprinttype  = "arXiv",
eprint      = "math/9802064",
coden       = "APNMA4",
issn        = "0066-2216",
mrclass     = "14E05",
mrnumber    = "1460600 (98j:14013)",
mrreviewer  = "Zbigniew Jelonek",
language    = "english",
}

.....

@BOOK{AizGant:r,
author      = "Айзерман, М. А. and Гантмахер, Ф. Р.",
title       = "Абсолютная устойчивость регулируемых систем",
publisher   = "Изд-во АН СССР",
address     = "М.",
year        = "1963",
pagetotal   = "140",
language    = "russian",
}

@ARTICLE{Anosov:PSIM67:r,
author      = "Аносов, Д. В.",
title       = "Геодезические потоки на замкнутых римановых многообразиях отрицательной кривизны",
journal     = "Тр. МИАН",
fjournal    = "Труды Математического института имени В. А. Стеклова",
year        = "1967",
volume      = "90",
pages       = "3--209",
url         = "https://mi.mathnet.ru/tm2795",
language    = "russian",
}

.....

```

The following is a fragment of the `example.bbl` file generated as a result of the conversion and containing the bibliography database in the AMSBIB format:

————— Fragment of the AMSBIB database `example_en.bbl` generated during conversion —————

```

\begin{thebibliography}{10}
% \bib, bibdiv, biblist are defined by the amsrefs package.

\Bibitem{BKK:IEEETNN96}
\by A.~Bhaya, E.~Kaszkurewicz, V.~S.~Kozyakin
\paper Existence and stability of a unique equilibrium in continuous-valued
discrete-time asynchronous {H}opfield neural networks
\jour IEEE Trans. Neural Netw.
\yr 1996
\vol 7
\issue 3
\monthissue May

```

```

\pages 620--628
\crossref{https://dx.doi.org/10.1109/72.501720}
\elink{url{ https://ieeexplore.ieee.org/document/501720}}

\Bibitem{ChadKra:APM2:97}
\by J.~Ch{\k{a}}dzy{\n}ski, T.~Kra{\n}ski
\paper A set on which the {\L}ojasiewicz exponent at infinity is attained
\jour Ann. Polon. Math.
\yr 1997
\vol 67
\issue 2
\pages 191--197
\arxiv \href{http://arXiv.org/abs/math/9802064}{\allowbreak
  math/9802064}\miscnote
\mathscinet{https://www.ams.org/mathscinet-getitem?mr=1460600}

.....

\RBibitem{AizGant:r}
\by М.~А.~Айзерман, Ф.~Р.~Гантмахер
\book Абсолютная устойчивость регулируемых
  систем
\yr 1963
\publ Изд-во АН СССР
\publaddr М.
\totalpages 140

\RBibitem{Anosov:PSIM67:r}
\by Д.~В.~Аносов
\paper Геодезические потоки на замкнутых
  римановых многообразиях отрицательной
  кривизны
\jour Тр. МИАН
\yr 1967
\vol 90
\pages 3--209
\mathnet{https://mi.mathnet.ru/tm2795}

.....

\end{thebibliography}

```

Список литературы

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