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March 2022

Introduction to the database
MathSciNet – Mathematical Reviews

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1. General

1.1. Content
MathSciNet is a bibliographical database, which includes reviews and abstracts. It has been published by the American Mathematical Society since 1940. It covers all areas of pure and applied mathematics and the history of mathematics. Some of the entries date back to the early 19th century because digitised historical mathematical journals are constantly being added. These data sets appear in the database as DML Items (Digital Mathematics Library Items). The journal "Current Mathematical Publications" has also been incorporated into MathSciNet.

1.2. Database
The database contains approximately 4 million bibliographical descriptions of articles from journals, serial publications, and conference proceedings, together with the bibliographical descriptions of monographs. For more than 2.7 million entries there are links to the document in full text. Every year, more than 125,000 new entries edited by a great number of specialists are added to the database and more than 90,000 entries are reviewed. The documents are classified according to the Mathematics Subject Classification (MSC 2020).

1.3. Update
The database is updated daily.

1.4. Access
Access rights are restricted to the network of ETH Zurich (domain ethz.ch). ETH Zurich members also have access off-campus by using proxy.ethz.ch or VPN.

1.5. Homepage
The homepage of the database is shown below:

Notes

- You can set the language of the interface under *Preferences* (English, French, German, Chinese, Japanese, Russian, and Spanish), although only a few of the pages, and hardly any of the texts, have been translated into the various languages (see α).
- The database offers a variety of search options: searches for publications, authors, and journals (see β).
- A statistical analysis of citations is under construction for authors and journals (see γ).
- Under *Free Tools*, you can find some useful features, such as searching for MSC and for the latest literature on a specific topic (see δ).
- You can find helpful information on the database under *Librarians* and *Help* (see ε). The contents of the help are context-sensitive.

1.6. Copyright

All the abstracts and reviews provided by MathSciNet are, like any other publication, subject to copyright. Copyright for individual articles is covered by the terms of the journals in which the articles were published.

2. Searching

MathSciNet offers a variety of search options. Before beginning a search, it is useful to define and limit the topic as closely as possible. Deciding on the right search strategy usually determines the most suitable search option to choose.

2.1. Publications

The database provides a user interface for a general search for publications. This allows the combination of search terms in various fields and allows the search to be refined using different criteria.

Notes

- Four of the fields can be linked using the Boolean operators *and*, *or,* and *not*. It should be noted that *and* and *not* are applied before *or*.
- The fields to be searched can be set by using the pull-down menus. The default settings are: Author, Title, MSC Primary or MSC Primary/Secondary, Anywhere.
- Boolean operators can also be used within a field; the term will be interpreted as being within brackets.
- Without the use of Boolean operators two or more keywords are searched as being linked by the Boolean operator *and*.
- Proximity search can be used within a field; *~n*, typed after two keywords in quotations marks, means that there can be a maximum of *n* words between them.

- Right-truncation using the symbol * can be applied. We recommend that the first name should usually be shortened when searching for authors. The symbol * can also be used as a wildcard for any number of characters within a word.
- When English words are entered in a search, they are normally searched in the plural and the singular form, as applicable.
- When a query is analysed, TeX special symbols are replaced by spaces. The use of TeX special symbols is therefore optional.
- Reviews are currently written in English only. Searching with English keywords therefore tends to produce better results.
- The search can be refined by publication date or document type (books, journals, conference proceedings).

Examples

Query:	publications by Konrad Osterwalder as author, editor, …
Enter:	field Author or Related: osterwalder, k*

Query:	publications by Atiyah and Singer
Enter:	field Author: atiyah *and* singer

Query:	publications by Donald Knuth with "discrete mathematics" in the title
Enter:	field Author: knuth, d*
and	field Title: "discrete mathematics"

Query:	publications by Beno Eckmann issued after 1999
Enter:	field Author: eckmann, b*
	Year: > 1999

Query:	articles in conference proceedings on Poisson algebras (MSC=17B63) published between 2000 and 2005
Enter:	field MSC Primary/Secondary: 17B63
	Year Range: 2000-2005
	Publication Type: Proceedings

2.2. Authors

MathSciNet maintains a separate database of authors (authors, editors, translators, …), which allows to identify them unambiguously. Publications by a specific author can be found even if he or she is referred to by different names or where several authors have identical names.

Notes

- As you type the name of the author you are looking for, possible matches will be suggested.
- If the search produces only one result, the profile of the author is immediately shown.
- If the search produces more than one result, a brief view of the results is shown.
- *Publications* brings up all articles in the database that are linked to the author.
- *Refine Search* allows you to use the name for a publications search; the name can be combined with other terms.
- The author profile provides even more information (see example). The names and topics given are linked to the corresponding publications.
- The information provided is reliable from 1985 onwards. In the case of older publications it is possible that some variants of a name have not been merged.

Example

Query: profile of Eva Bayer-Fluckiger
Enter: bayer e
                  All name variants are included, and the profile appears immediately.

Bayer-Fluckiger, Eva

MR Author ID:	32925
Earliest Indexed Publication:	1979
Total Publications:	79
Total Related Publications:	3
Total Citations:	566

⊞ Published as: Bayer Fluckiger, Eva (1)

Publications
Related Publications
Reviews
Refine Search
Co-Authors
Collaboration Distance
Mathematics Genealogy Project
Citations

Co-authors (by number of collaborations)

Berhuy, Grégory   Bhaskhar, Nivedita   Borello, Martino   Cerri, Jean-Paul   Chaubert, Jérôme   Chuard-Koulmann, Pascale   Emery, Vincent   Fainsilber, Laura   First, Uriya A.   Hillman, Jonathan A.   Houriet, Julien   Huruguen, Mathieu   Jossen, Peter   Kearton, Cherry   Lee, Ting-Yu[2]   Lenstra, Hendrik W., Jr.   Maciak, Piotr   Martinet, Jacques   Michel, Françoise   Moldovan, Daniel Arnold   Monsurrò, Marina   Morales, Jorge F.   Nebe, Gabriele   Oggier, Frédérique E.   Parimala, Raman   Quéguiner-Mathieu, Anne   Schoof, René   Serre, Jean-Pierre   Shapiro, Daniel B.   Stoltzfus, Neal W.   Suarez Atias, Ivan   Taelman, Lenny   Tignol, Jean-Pierre   Viterbo, Emanuele   Wilson, Stephen Mark Johnson

Publications (by number in area)

Associative rings and algebras   Field theory and polynomials   General   Group theory and generalizations   History and biography   Information and communication, circuits   Manifolds and cell complexes   Number Theory   Number theory

Publications (by number of citations)

Associative rings and algebras   Field theory and polynomials   Group theory and generalizations   Information and communication, circuits   Manifolds and cell complexes   Number Theory   Number theory

2.3. Journals
MathSciNet maintains a separate database of all journals indexed since 1985.

Notes
- The search criteria are an abbreviation of the title, words from the title, and the ISSN. A list of current abbreviations can be obtained via *Help* and other abbreviations will also produce hits.
- *Publications Listed* brings up the indexed articles in the journal.
- Where under *Coverage* a journal is shown as "Cover-to-cover", all the articles in the journal are being indexed in MathSciNet.
- *List All Issues* brings up the indexed issues of the searched journal.
- Under *Citations* you can find a statistical analysis of the citations.

Example

Query: the latest articles from "The Annals of Statistics"
Enter: annals statistics
                then: *Publications Listed*, the most recent articles appear at the top

The Annals of Statistics

Journal Details

Abbreviation	Ann. Statist.
Publisher	Inst. Math. Statist.
Websites	projecteuclid.org jstor.org
ISSN (Print)	0090-5364
ISSN (Online)	2168-8966
Frequency	6 issues/vol./yr.
Publications Listed	5.522
Reference Lists	Since 1997
Publications Cited	4.551 (82,4% of publications)
Citations	86.244 from 28.124 publications
Latest Issue	2021, vol. 49, iss. 1
Earliest Issue	1973, vol. 1
Coverage	Cover-to-cover

Recent Issues

Volume	Issue	Year	
49	1	2021	View
48	6	2020	View
48	5	2020	View

List All Issues

Concise History

Title	Start	End
The Annals of Statistics	1973	-

Journal Title History

Citations made to journal over **all time**.
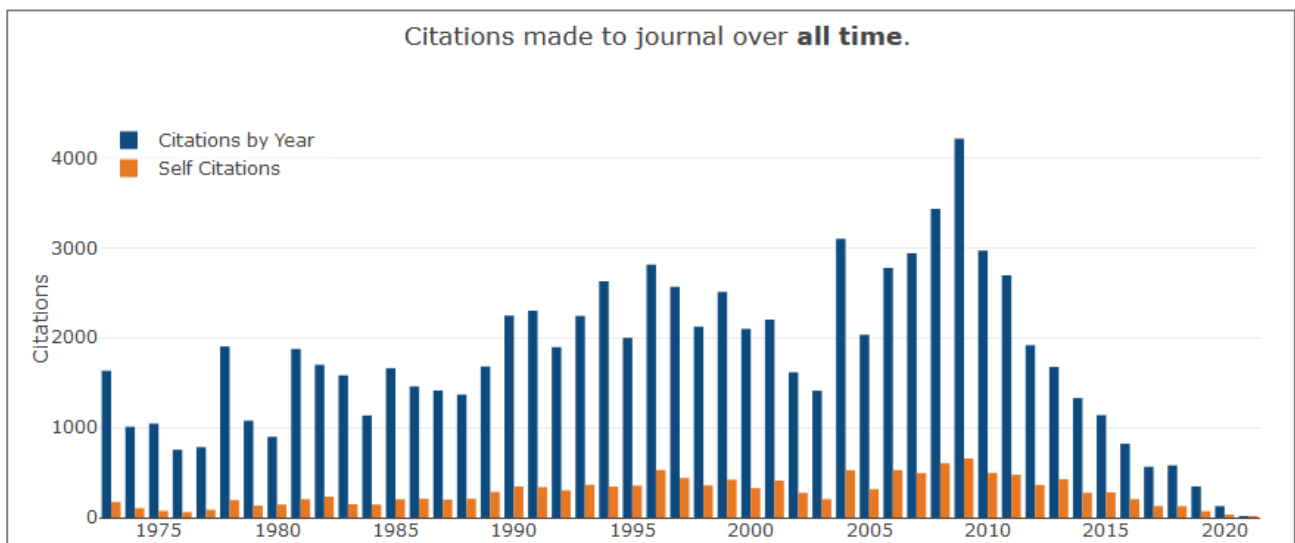
2.4. Citations

An analysis of citations is a fairly new development by MathSciNet.

Author Citations

This search displays an author's ten most-cited publications. It should be noted that this feature is still under construction: only the most recent volumes (usually from 2000 onwards) from a limited list of journals have been evaluated to date. This feature is described in detail in the essay [Understanding the Citation Database](#).

> **Example**
>
> Query: the most frequently cited publications by George Polya
>
> Enter: polya, g

Author Citations for George Pólya
George Pólya is cited 7648 times by 7606 authors
in the MR Citation Database

Citations	Publication	
2846	**MR0046395 (13,727e)** Hardy, G. H.; Littlewood, J. E.; Pólya, G. Inequalities. 2d ed. *Cambridge, at the University Press,* 1952. xii+324 pp. 27.0X	Book
1021	**MR0944909 (89d:26016)** Hardy, G. H.; Littlewood, J. E.; Pólya, G. Inequalities. Reprint of the 1952 edition. Cambridge Mathematical Library. *Cambridge University Press, Cambridge,* 1988. xii+324 pp. ISBN: 0-521-35880-9 26Dxx (01A75)	Book
593	**MR0043486 (13,270d)** Pólya, G.; Szegö, G. Isoperimetric Inequalities in Mathematical Physics. Annals of Mathematics Studies, no. 27, *Princeton University Press, Princeton, N. J.,* 1951. xvi+279 pp. (Reviewer: M. Brelot) 52.0X	Book
227	**MR0271277 (42 #6160)** Pólya, Georg; Szegő, Gábor Aufgaben und Lehrsätze aus der Analysis. Band I: Reihen, Integralrechnung, Funktionentheorie. (German) Vierte Auflage. Heidelberger Taschenbücher, Band 73 *Springer-Verlag, Berlin-New York* 1970 xvi+338 pp. 26.00	Book
177	**MR0344042 (49 #8782)** Pólya, G.; Szegő, G. Problems and theorems in analysis. Vol. I: Series, integral calculus, theory of functions. Translated from the German by D. Aeppli Die Grundlehren der mathematischen Wissenschaften, Band 193. *Springer-Verlag, New York-Berlin,* 1972. xix+389 pp. 00A05	Book

Journal Citations

MathSciNet also allows citations of articles in a specific journal to be analysed. This feature is described in detail in the essay Understanding the Citation Database.

Example
Query: How often was "The Annals of Statistics" cited in 2020?
Enter: annals statistics
                Citing Year: 2020

2.5. Current Journals
The most recent indexed journals can be searched using the *Free Tools*. All you have to enter here is the time frame you want, e.g. "last week".

2.6. Current Publications
The latest literature on a specific topic can be found using the *Free Tools.* Access is via MSC. You can search for the latest books, journal articles, or conference proceedings. You can also filter your search by indexed or reviewed documents:

Examples
Query: books on the history of mathematics (MSC 01) reviewed in the current month
Enter: This month, Books, Reviewed, 01 (in the top field, under Classification)

Query: articles on "graph coloring" (MSC 05C15) indexed in the current month
Enter: This month, Journals, Indexed, 05C15 (in the bottom field)

3. Results

3.1. Results list

The result of a search for publications is a list of documents that meet the search criteria. The filtering function shown on the left-hand side provides you with a refinement of the list. It is also possible to search within the results. Clicking on many of the elements will lead to additional information, e.g. to other articles by the same author, to the profile of the journal, or to the full text of the article.

Notes

- The brief view gives the bibliographical data author, article title, source, and the MSC codes with additional links.
- The search criteria are shown above the results list (see α).
- The hits are displayed chronologically, with the most recent titles appearing at the top. They can also be displayed with the oldest titles appearing at the top or according to the number of citations or authors.
- Clicking on the MR number will take you to the full view of the hit (see β).
- You can find other publications by the same author by clicking on the name (see γ).
- Clicking on the journal title will take you to the journal's entry in the database. The link to the specific issue of the journal will take you to its articles (see δ).
- *Article* provides a direct link to a full-text version of the article (where available, see ε).

- The button ETH Get it takes you to the ETH Library's collection; use it if the *Article* link is not active (see ε).
- The links via the MSC codes allow you to search for other documents in the database on the same topics (see φ).
- By clicking on *Clipboard* under the entry you can save hits in the *Clipboard* and use them later (see λ).
- Selected hits can be displayed via *Retrieve Marked* in different formats in brief or full view.

3.2. Full view of an entry

In addition to the links discussed above under "Results list", the full view gives extra information and links.

Notes

- Starting from a hit in full view, you can navigate to the next or previous hit in the list without having to go back to the results list (see α).
- The search criteria are displayed above the full view (see β).
- Author details are expanded by the addition of details of his institution (see γ).
- This view focuses on the review or abstract of the publication. Documents cited in the article are given under *References* (see δ).
- Clicking on *From References* will take you to documents that cite the article (see ε).
- Clicking on *From Reviews* will take you to documents whose reviews or abstracts cite the article (see ε).

3.3. Further use of results

MathSciNet does not offer useful features such as editing or saving searches you have carried out or setting up alerts. Two helpful applications for working with your results are the following:

Make Link

Available from the full view, *Make Link* (see α) allows you to define a permanent link to a MathSciNet entry and to cite it in a document.

Clipboard

The *Clipboard* (see β) is accessible from any screen. It is only shown if it contains items, and it allows you to collect pertinent entries during a search. These can then be displayed in various formats. If the entries are ready for export, the *Clipboard* can be opened by clicking on it. You can then specify the format (e.g. BibTex). Clicking on *SaveClip* leads to the entries in the chosen format. The result can be saved in text form and exported to a literature management program (e.g. RefWorks or EndNote).

4. Accessing full text

MathSciNet is a bibliographical database that contains the full texts of reviews and abstracts, but not of individual articles. A most welcome development of MathSciNet is the ability to link articles to outside collections of full texts. Links to articles in the "Annals of Mathematics" have gradually been expanded, initially with full texts from the "Transactions of the American Mathematical Society" and subsequently with journals on mathematics and its applications that have been digitised as part of the various digitisation projects around the world characterized as the World Digital Mathematics Library (WDML). The long-term objective is to cover all digitised journals published before 1940.

There are two options for accessing full texts from either a results list or from full view. *Article* gives an initial link to an article. If this link is not available, you can use the button ETH Get it. This function takes you to the full text if the ETH Library has licensed the journal online. If the journal is not available online, the availability of a printed version can be checked in ETH Library @ swisscovery. If it is not possible to order the publication itself, or a copy, online, it can be obtained through the interlibrary loan service.

5. Using MSC

The Mathematics Subject Classification is maintained jointly by the editors of MathSciNet and zbMATH and is constantly being developed. This classification system is very widely used, and the version currently in use is MSC 2020, which is made up of 63 main classes and more than 6,000 sub-classes.

The content of the documents indexed in MathSciNet is described by MSC 2020 codes. The use of MSC is best for a precise thematic search and has the great advantage that the codes do not depend on the language. A search can be started with a keyword search in order to find the appropriate classes by following the example of appropriate entries. The search can then be continued in a structured way with the help of the codes found and by combining them with other terms. It is also possible to carry out a more comprehensive search by entering only the first two numbers of the code and then right-truncating with *.

The classification system differentiates between primary and secondary classification, depending on whether a topic is taken to be the main topic or not. A search for publications can thus be carried out in the MSC Primary or MSC Primary/Secondary fields.

MSC 2020 can be consulted directly from *Free Tools* on the home page of MathSciNet. You can navigate through the hierarchy of the system as well as search for a term using a keyword search:

Example

Query:	classification code for "Diophantine equations"
Enter:	type diophantine equations in the bottom field

An important use of MSC which we have already mentioned is in searching for the latest literature on a particular topic (see 2.6.).

The complete MSC 2020 can be downloaded as a [PDF](PDF).