

works compile and index the work published in many primary sources and usually apply a subject structure or classified arrangement to facilitate the review of the literature. Secondary works are often called indexes or abstracting journals, as they were originally published as printed periodicals.

There are two major current indexes to the research literature of mathematics; *Mathematical Reviews*, published by the American Mathematical Society, and *Zentralblatt für Mathematik*, published by Springer-Verlag for various European mathematics agencies, including the Fachinformationszentrum Karlsruhe. However, each will likely become known by their electronic database names: MathSciNet and Zentralblatt MATH, respectively. Both date from the 1930–40 era, and their development springs from global politics between the World Wars (see Sec. III.D).

A. MathSciNet/Mathematical Reviews (MR)

<http://www.ams.org/mathscinet/>

MathSciNet/Mathematical Reviews (MR) is created and maintained by the American Mathematical Society. MR comprehensively indexes and reviews journals, conference proceedings, and books of mathematics research. MR editors are professional mathematicians who assign expert reviewers from around the world to review current published research articles. The reviews are classified according to the Mathematics Subject Classification (MSC) that divides mathematics into an evolving structure of more than 60 categories (see Sec. III.F). Mathematical Reviews is a subscription service that includes not only the online database MathSciNet, but print and CD-ROM products as well.

The practice of publishing reviews is longstanding in mathematics. Reviews are written in English. The reviews can be evaluative, with substantial references to prior literature, and the reviewer sometimes signs the reviews. Other reviews are taken from the author's abstract. Some articles receive indexing-only treatment and are not reviewed. Reviewers are professional volunteers, and the timeliness of their work is variable. Articles are entered into the database upon receipt and await a full review based upon the speed of the reviewer's work.

MR covers books and journals that contribute new mathematical research. Applied mathematics papers that contain new mathematical results or give novel and interesting applications of known mathematics are covered (1). Some topics, such as applied statistics, are not given full reviews but are listed with indexing treatment. Articles on mathematics pedagogy are not included in MR.

Like any vital reference source, the publishers of the MR database are consistently enhancing the product. The contents of MR back to the first

issue in 1940 are digitized and searchable in MathSciNet. Since 1998, MR has included the footnotes and references listed at the end of articles for some of the journals in the database and is linking those references to the original MR review when possible (see Sec. III.H). The addition of reference lists is facilitating the (limited) tracking of citations to an article if the appropriate links are in place. MR is also creating Math Reviews entries for articles published in AMS journals before the 1940 beginning of the database. This will further enrich retrospective linking.

Searching MathSciNet

Those new to MathSciNet can use a Quick Start feature that leads the user through the search process. Once there is some familiarity, it is best to use the Full Search screen as a starting point with its default display of the most commonly searched fields. Most users are looking for works by a specific author. MathSciNet's Author database gathers all variant forms of an author's name into a single search—a most valuable feature. The Journals database facilitates browsing the contents of indexed journals issue by issue. The Title and Anywhere fields allow searching by keywords. It is also possible to search for mathematical terms in raw TeX code.

Search results screens show a brief display of the basic bibliographical information. Individual reviews can be downloaded in a variety of formats. If online full text is available, the article or journal link is highlighted. Access to any linked article is dependent upon your individual subscription status or that of your institution. Mathematical Reviews has negotiated with a large number of publishers to provide links to their electronic products, and the list will continue to grow. As of early 2003, there were links to articles in more than 700 journals.

Another useful feature is a citation checker, MR Lookup, which links from the MathSciNet homepage. Users can enter basic information and verify citations without having to construct a database search. This is especially useful when preparing a reference list or bibliography.

Sample Citation:

[1] 2003b:68161 Chung, Fan; Garrett, Mark; Graham, Ronald; Shallcross, David Distance realization problems with applications to internet tomography. *J. Comput. System Sci.* 63 (2001), no. 3, 432–448. (Reviewer: Richard D. Ringeisen) 68R10 (68M10 68Q25 68U35)

Full-text links are available directly from the results display screen and are highlighted if AMS has established electronic contact. The tag "Linked PDF" leads to a PDF image of the review, not to a PDF of the journal article.

Navigation tips include:

1. Click on the MR number (2003b:68 161) to display the text of the review.
2. Each author is searchable from these links.
3. Clicking on the Classification numbers [68R10 (68M10 68Q25 68U35)] displays the MSC subject and classification structure that applies to the article.
4. Button/Tab Links are provided to the full text of the article or to a journal's home page if available. The ability to access the text is dependent upon your institution's subscriptions.
5. The Document Delivery link requires payment for the article. Double check with your local library before purchasing an article. Many institutions have services to supply material not owned locally.