

zbMATH

the first resource for mathematics

- The most comprehensive reviewing and abstracting service in mathematics
- Complete coverage of mathematical publications from 1868 to the present
- Over 3.6 million records from more than 3,000 current journals and serials, and more than 171,000 books

zbmath.org

NEW features:

- Extended citation analysis
- Integration of links to free arXiv versions
- A sub-database for mathematical software



New Editor-in-Chief

Klaus Hulek, Professor and former Vice President for Research at Leibniz Universität Hannover, and former representative of the German Rectors' Council in the Research Policy Working Group of the European University Association (EUA).

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zbmath.org

zbMATH

The world's largest database for mathematics offers easy access to article reviews and abstracts in mathematics from the 19th century to the present

The amount of scientific information and publications in the field of mathematics and its applications has immensely grown over the last decades. This increases the need of scholars, scientists and librarians to have a comprehensive resource of curated information on knowledge in all mathematical disciplines.

zbMATH, well known under its former name Zentralblatt MATH, provides easy access to bibliographic data, reviews and abstracts from all areas of pure and applied mathematics, as well as its applications, in particular to the natural sciences, computer science, economics and engineering. It also covers history and philosophy of mathematics and university education. All entries are classified according to the Mathematics Subject Classification Scheme (MSC 2010) and are supplemented with keywords in order to characterize their particular content and to allow for efficient retrieval.

Key Features

- Over 3.6 million publication records from more than 3,000 journals and serials and 171,000 books, from 1868 to the present
- New content daily, with about 120,000 additions per year
- Rigorous editorial process where all entries are semantically enriched with appropriate MSC codes and keywords
- Independent reviews contributed by 7,000 global expert mathematicians, supplementing the majority of records in core mathematics areas
- More than 2.1 million documents with direct links to full texts or open repositories and digital libraries like arXiv.org, EuDML, Numdam, Project Euclid, and others
- More than 900,000 author profiles with information on the publication record, scientific networks, publication topics and citation analysis
- Community interface supports author name disambiguation and addition of external links like to Math Genealogy Project, Wikipedia, Math-Net.Ru or Researchgate
- Display and cross-linking of almost 18 million references highlighting citation relations between records
- Integrated MathML and optional MathJax enables immediate display of mathematical equations and formulae
- Semantic enrichment of the data and addition of complementary facets such as mathematical software
- Formula search available as sole feature and integration into the structured search allows for free combination with other query types

Anticipating the future of scholarly communication

In today's dynamically changing publication landscape, new types of information are becoming important. Bibliographical services, no longer mere repositories of metadata, must answer questions pertaining to scientific networks, authorships and semantic inter-relations. zbMATH meets the needs of today's mathematicians by presenting this multifaceted information quickly and easily. The new interface, zbmath.org, combines deep search capabilities with a user friendly and intuitive design. The comprehensive abstract information is supplemented by links to the original source documents, open repositories, and digital libraries, bringing the world of mathematics to every user's fingertips.

zbMATH – an innovative web service

The powerful search capabilities of zbMATH are embedded in a cutting-edge interface

Clean Google-like interface, with separated tabs for easy navigation among different search facets: documents, authors, journals, classification codes, software and formulae

The screenshot shows the zbMATH search interface. At the top, there are tabs for Documents, Authors, Journals, Classification, Software, and Formulae. A search bar contains the query 'any:Wiles'. Below the search bar, there are options to 'mark all' and 'display marked items'. The results section shows 'Found 13 documents (Results 1–13)'. The first result is by Grobstich, Peter, titled 'The great theorem of Fermat on the equations $x^N + y^N = z^N$. Theory, computations, history. (Der Große Satz von Fermat über die Gleichungen $x^N + y^N = z^N$. Theorie, Berechnungen, Geschichte.) (German)'. The second result is by Mozzochi, C. J., titled 'The Fermat proof. (English)'. The third result is by Karmakar, Sudhangshu B., titled 'On a pair of Diophantine equations. (English)'. On the right side, there is a 'Filter results by ...' section with filters for Authors, Journals, and Classification.

Formula search using place holders to find all related documents

Search results can be filtered by authors, journals, classification codes and publication years, ordered according to frequency of citation

Display of a single record

The screenshot shows the zbMATH interface displaying a single record for Ribet, K.A. The record is titled 'On modular representations of $\text{Gal}(\overline{\mathbb{Q}}/\mathbb{Q})$ arising from modular forms. (English)'. The record includes the journal information 'Invent. Math. 100, No.2, 431-476 (1990)'. The abstract states: 'In this paper the author proves a conjecture of Serre on the level of an irreducible modular Galois representation $\rho: \text{Gal}(\overline{\mathbb{Q}}/\mathbb{Q}) \rightarrow \text{GL}(2, \mathbb{F})$, where \mathbb{F} is a finite field of odd characteristic ℓ . Followed by an idea of G. Frey [Ann. Univ. Sarav., Ser. Math. 1, 1–40 (1986; Zbl 0586.10010)], the main result of this paper has the remarkable application that the Taniyama-Shimura-Weil conjecture (i.e. every elliptic curve over \mathbb{Q} is modular) implies Fermat's Last Theorem. The representation ρ is said to be modular of level N if it arises from a weight-2 newform of level dividing N and trivial "Nebentypus character". We say that ρ is "finite at p " if there is a finite flat \mathbb{F} -vector space scheme H over \mathbb{Z}_p for which the action of $\text{Gal}(\overline{\mathbb{Q}}_p/\mathbb{Q}_p)$ on the \mathbb{F} -vector space $H(\overline{\mathbb{Q}}_p)$ gives ρ_p , where ρ_p is the restriction of ρ to the decomposition group $\text{Gal}(\overline{\mathbb{Q}}_p/\mathbb{Q}_p)$ of $\text{Gal}(\overline{\mathbb{Q}}/\mathbb{Q})$. If $\ell \neq p$, this means simply that ρ is unramified at p . J.-P. Serre conjectured [Contemp. Math. 67, 263–268 (1987; Zbl 0629.14016)] that if ρ is modular of level N and if p is finite at a prime p which divides N exactly once, then ρ is also modular of level N/p . Mazur proved this conjecture in the case of $p \equiv 1 \pmod{\ell}$. The main theorem of this paper asserts that Serre's conjecture is true whenever N is not divisible by ℓ . Besides Mazur's techniques, the paper makes use of results of Néron models of Jacobians (due to Raynaud) and of the bad reduction of classical modular curves (Deligne–Rapoport) and Shimura curves (Cherednik–Drinfel'd). Particularly, the author developed a beautiful interchange principle – analogous to the Jacquet–Langlands correspondence – which compares certain data obtained from Shimura curves in characteristic p to corresponding data obtained from certain modular curves in characteristic $q \neq p$. The record also includes a list of MSC codes, keywords, and a list of references.

All bibliographic information is displayed in a clean and comprehensible way

Formulae and diagrams shown in MathML for a browser-independent, correct visualization

External experts provide their independent point of view with a review of the publication

Shows how often this document was cited (including zbMATH reviews). Click to display the full list

Appropriate codes from the MSC classification scheme and keywords contribute to the semantic enrichment of the records

Multiple links to full-text records, including to publishers via DOI, as well as to full-text open repositories and digital libraries

Complete list of references of this publication

Author Profile

zbMATH

Documents Authors Journals Classification Software Formulæ

ai.perelman.grigori-yakovlevich

Fields Operators Help

Perel'man, Grigoriĭ Yakovlevich

Author ID: perelman.grigori-yakovlevich

Published as: Perel'man, G.Ya.; Perelman, Grisha; Perelman, G.; Perel'man, G.

External Links: MGP · Math-Net.Ru · Wikidata

Documents indexed: 22 Publications since 1985

Co-Authors

- 1 Burago, Yu.D.
- 1 Gromov, Mikhail
- 1 Petrunin, A.M.
- 1 Polikanova, I.V.

Journals

- 3 arXiv e-print service [electronic only]
- 2 Journal of Soviet Mathematics
- 2 Sibirskij Matematicheskij Zhurnal
- 2 Ukrainskij Geometricheskij Sbornik
- 2 St. Petersburg Mathematical Journal

Classification

- 18 Differential geometry (53-XX)
- 4 Convex and discrete geometry (52-XX)
- 4 Manifolds and cell complexes (57-XX)
- 1 Global analysis, analysis on manifolds (58-XX)

Publications by Year

New! Collaboration distance tool

New! External links to Math Genealogy Project, Wikipedia, Math-Net.Ru or Researchgate

Breakdown according to coauthors, journals and mathematical subjects

Publications are displayed in chronological order as a clickable diagram for easy visualization of the author's scientific output

Citations contained in zbMATH (collection of data to be completed)

all cited Publications

15 Publications have been cited 652 times in 431 Documents

	Cited by	Year
The entropy formula for the Ricci flow and its geometric applications. Zbl 1130.53001	307	2002
Ricci flow with surgery on three-manifolds. Zbl 1130.53002	144	2003
Finite extinction time for the solutions to the Ricci flow on certain three-manifolds. Zbl 1130.53003	90	2003
A. D. Alexandrov spaces with curvature bounded below. Zbl 0802.53018	32	1992
Proof of the soul conjecture of Cheeger and Gromoll. Zbl 0818.53056	16	1994

Cited by Authors

- 17 Ma, Li
- 10 Wu, Jia-Yong
- 8 Cao, Xiaodong
- 8 Guo, Hongxin
- 8 Lu, Peng

Cited in Journals

- 27 The Journal of Geometric Analysis
- 24 Geometry & Topology
- 22 Geometriae Dedicata
- 21 Annals of Global Analysis and Geometry
- 19 Duke Mathematical Journal

Cited in Fields

- 346 Differential geometry (53-XX)
- 94 Global analysis, analysis on manifolds (58-XX)
- 79 Manifolds and cell complexes (57-XX)
- 65 Partial differential equations (35-XX)
- 22 Relativity and gravitational theory (83-XX)

Citations by Year

Shows the 5 most cited articles, their publication year and how often they have been cited. Daily extended and updated.

Expand list to show all cited publications

Overall number of citations divided into: cited by whom, in which journals and in what field

Number of citations made to author's publications per year

Journal Profile

Inventiones

Online: <http://link.springer.com/journal/volumesAndIssues/222>

Comments: Indexed cover-to-cover

Documents indexed: 4031 publications since 1966

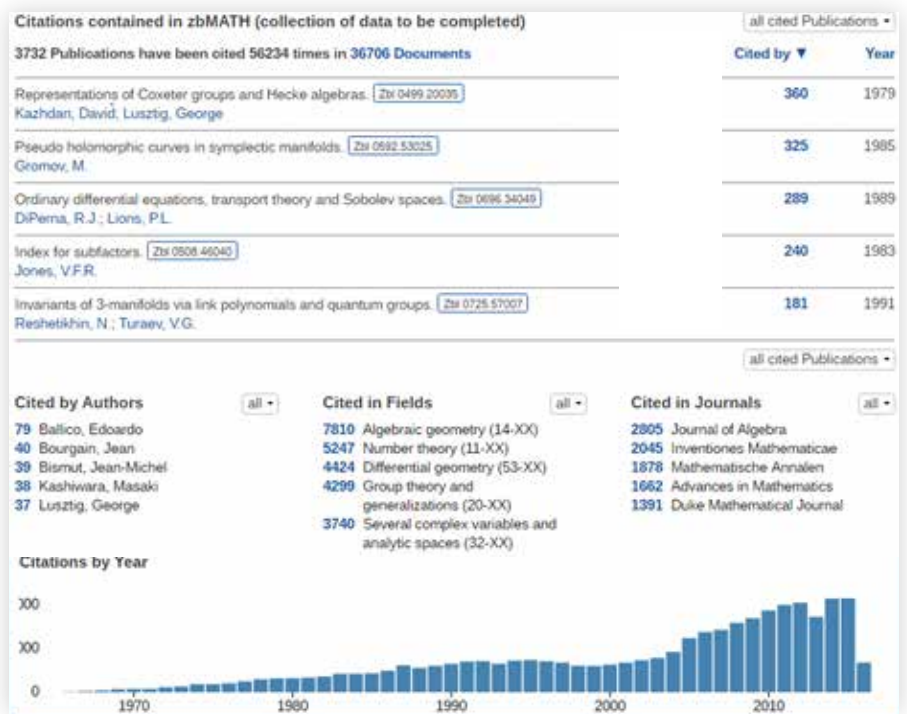
Authors all ▾

- 14 Iwaniec, Henryk
- 13 Deligne, Pierre
- 13 Eisenbud, David
- 13 Harris, Joseph Daniel
- 12 Kashiwara, Masaki

Classification all ▾

- 1153 Algebraic geometry (14-XX)
- 759 Number theory (11-XX)
- 498 Several complex variables and analytic spaces (32-XX)
- 487 Manifolds and cell complexes (57-XX)

- Bibliographic information and direct link to the journal
- Breakdown of most prolific authors and research fields
- **NEW!** Full citation analysis, including most cited articles as well as citing journals



swMATH – Search facet for mathematical software

Short description of the software package

Related keywords

Links to zbMATH documents mentioning the software

swMATH Search Advanced search Browse

Maple

The result of over 30 years of cutting-edge research and development, Maple helps you analyze, explore, visualize, and solve mathematical problems. With over 5000 functions, Maple offers the breadth, depth, and performance to handle every type of mathematics. Maple's intuitive interface supports multiple styles of interaction, from Clickable Math™ tools to a sophisticated programming language. Using the smart document environment provided by Maple, you can automatically capture all of your technical knowledge in an electronic form that combines calculations, explanatory text and math, graphics, images, sound, and diagrams.

This software is also referenced in ORMS.

Keywords for this software

Maple, differential equations, eigenvalues, normal form, computer algebra, stability, bifurcation, Hopf bifurcation, Proceedings, exact solutions, algorithms, convergence, exact solution, symbolic computation, Grobner bases, Grobner basis, numerical, ordinary differential equations

References in zbMATH (referenced in 3632 articles, 10 standard articles)

Showing results 1 to 20 of 3632. Sorted by year (citations) 20 ▾

1 2 3 ... 180 181 182 next

1. Abramovich, Sergei: Exploring mathematics with integrated spreadsheets in teacher education (2016)
2. Alcázar, Juan Gerardo; Hermoso, Carlos: Involutions of polynomially parametrized surfaces (2016)
3. Aliev, Ali V.; Mishchenko, Olga V.; Lipanov, Alexey M.: Mathematical modeling and numerical methods in chemical

Article statistics & filter:

Search for articles

MSC classification

- Top MSC classes
- 11 Number theory

Related software:

- Mathematica
- Matlab
- MACSYMA
- REDUCE
- SINGULAR
- AXIOM
- GAP
- Magma
- Macaulay2
- RegularChains

Show more...

URL: www.maplesoft.com/

Authors: Waterloo Maple Inc.

Dependencies: Maple

Add information on this software.



Benefits for mathematicians

- Always rely on zbMATH for the latest search results, as content items are uploaded daily
- Search results are comprehensive, with items categorized by MSC codes, keywords, etc.
- Refine your search with intuitive filters and logical operators, and formulate complex search queries with ease
- Quick, accurate and complete equation formatting of complex formulae is facilitated by the integrated MathML or MathJax font rendering system
- Navigate to the source material to view further information and full texts, if available to you
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