

【AMS MathSciNet 助力科研 第二期】

——深入理解MSC分类体系

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MSC的全称是 Mathematics Subject Classification，是美国数学会(American Mathematical Society, AMS)编制的针对数学文献的分类法。AMS MathSciNet 及Zbl MATH都采用MSC分类体系。

MSC分类法根据数学学科的发展每隔10年左右作一次修订，现存的版本有1980年版、1991年版、2000年版、2010年版，最新的版本是2010年版。MSC分类法修订工作是在AMS的协助下，由MR和Zbl MATH的编辑们完成的。目前MSC2020版正在修订阶段，如果您对MSC的分类体系需反馈，可访问msc2020.org提交反馈意见，该网站也可以查看同行提交的反馈信息。

MSC的分类号由五位字符构成，前两位为数字（一级分类），第三位是字母或“—”（与前两位数字组成二级分类），后两位为数字（与前三位字符组成三级分类），MSC分类体系基本涵盖了与数学有交叉的物理、化学、生物、计算机及其他自然科学、社会科学等各个方向。

为方便读者使用MSC分类，AMS免费提供MSC在线版，读者可以浏览、检索全部MSC分类体系。

在MathSciNet首页 (ams.org/mathscinet) 点击右上角的“[免费工具箱/freetools](#)”进入MSC在线版，以通信领域中的循环码（Cyclic codes）为例，MSC在线版支持模糊匹配，为提高检全率，采用“[Cyc* code*](#)”作为检索词，相关图片如下

The screenshot shows the AMS MathSciNet homepage. At the top, there is a navigation bar with links for Clipboard, Home, Preferences, Free Tools (which is highlighted with a red box), About, Librarians, Terms of Use, and Blog. Below the navigation bar, there is a search bar labeled "Search MSC" (also highlighted with a red box). To the right of the search bar are tabs for Collaboration Distance, Current Journals, and Current Publications. On the left side of the page, there is a sidebar with various search filters and a search button.

The screenshot shows the search results for "Cyc* code*". The results list three items: 94 (1940-now) Information and communication, circuits; 94B (1980-now) Theory of error-correcting codes and error-detecting codes; and 94B15 (1980-now) Cyclic codes. The item 94B15 is highlighted with a red box.

Cyclic codes的分类号为94B15，在分类号的后面有年份起止时间（1980-now），1980为该分类号的生效时间，now表示该分类号现在还在有效期。点击94B，可查看[Cyclic codes](#)的同级分类（三级分类）：

The screenshot shows the detailed search results for 94B. It lists numerous sub-classifications under 94B, such as 94B05 (1980-now) Linear codes, general; 94B10 (1980-now) Convolutional codes; 94B12 (1991-now) Combined modulation schemes (including trellis codes); 94B15 (1980-now) Cyclic codes; 94B20 (1980-now) Burst-correcting codes; 94B25 (1980-now) Combinatorial codes; etc. The item 94B15 is highlighted with a red box.

点击94 可查看[Theory of error-correcting codes and error-detecting codes](#)的同级分类（二级分类）：

The screenshot shows the detailed search results for 94. It lists numerous sub-classifications under 94, such as 94-00 (1973-now) General reference works (handbooks, dictionaries, bibliographies, etc.); 94-01 (1973-now) Instructional exposition (textbooks, tutorial papers, etc.); 94-02 (1973-now) Research exposition (monographs, survey articles); 94-03 (1973-now) Historical (must also be assigned at least one classification number from Section 01); 94-04 (1973-now) Explicit machine computation and programs (not the theory of computation or programming); 94-06 (1973-now) Proceedings, conferences, collections, etc. The item 94B is highlighted with a red box.

点击页面右上方的免费工具箱/freetools可查看[Information and communication, circuits](#)等其他一级分类

The screenshot shows a dropdown menu for "Select a Mathematics Subject Classification". The menu lists various categories, including 00 General, 01 History and biography, 02 Logic and foundations (not currently valid), 03 Mathematical logic and foundations, 04 Set theory (not currently valid), 05 Combinatorics, 06 Order, lattices, ordered algebraic structures, 08 General algebraic systems, 09 Classical algebra (not currently valid), 10 Number Theory (not currently valid), 11 Number theory, 12 Field theory and polynomials, 13 Commutative rings and algebras, 14 Algebraic geometry, 15 Linear and multilinear algebra, matrix theory, 16 Associative rings and algebras, 17 Nonassociative rings and algebras, 18 Category theory, homological algebra, 19 K-theory, 20 Group theory and generalizations, 21 Topological algebraic structures (2010版已停用), 22 Topological groups, Lie groups, 26 Real functions, 27 Analysis (2010版已停用), 28 Measure and integration, 30 Functions of a complex variable, 31 Potential theory, 32 Several complex variables and analytic spaces, 33 Special Functions, 34 Ordinary differential equations, 35 Partial differential equations, 36 Differential equations, operational calculus, 37 Dynamical systems and ergodic theory, 39 Finite differences and functional equations, 40 Sequences, series, summability, 41 Approximations and expansions, 42 Fourier analysis, 43 Abstract harmonic analysis, 44 Integral transforms, operational calculus, 45 Integral equations, 46 Functional analysis, 47 Operator theory, 48 Geometry (2010版已停用), 49 Calculus of variations and optimal control, 50 Geometry (2010版已停用), 51 Geometry, 52 Convex and discrete geometry, 53 Differential geometry, 54 General topology, 55 Algebraic topology, 56 Topology (2010版已停用), 57 Manifolds and cell complexes, 58 Global analysis, analysis on manifolds, 60 Probability theory and stochastic processes, 62 Statistics, 65 Numerical analysis, 68 Computer science, 69 General applied mathematics (2010版已停用), 70 Mechanics of particles and systems, 71 Mechanics (2010版已停用), 73 Mechanics of solids (2010版已停用), 74 Mechanics of deformable solids, 76 Fluid mechanics, 78 Optics, electromagnetic theory, 79 Mathematical physics, physical applications, 80 Classical thermodynamics, heat transfer, 81 Quantum theory, 82 Statistical mechanics, structure of matter, 83 Relativity and gravitational theory, 84 Relativity, astronomy (2010版已停用), 85 Astronomy and astrophysics, 86 Geophysics, 90 Operations research, mathematical programming, 91 Game theory, economics, social and behavioral sciences, 92 Biology and other natural sciences, behavioral sciences, 93 Systems theory, control, 94 Information and communication, circuits, 97 Mathematics education. The dropdown menu is highlighted with a red box.

下图为MSC一级分类清单，详细的分类表介绍见附件

The screenshot shows the full list of MSC categories in a dropdown menu. The categories are listed in two columns: 00 General, 01 History and biography, 02 Logic and foundations (not currently valid), 03 Mathematical logic and foundations, 04 Set theory (not currently valid), 05 Combinatorics, 06 Order, lattices, ordered algebraic structures, 08 General algebraic systems, 09 Classical algebra (not currently valid), 10 Number Theory (not currently valid), 11 Number theory, 12 Field theory and polynomials, 13 Commutative rings and algebras, 14 Algebraic geometry, 15 Linear and multilinear algebra, matrix theory, 16 Associative rings and algebras, 17 Nonassociative rings and algebras, 18 Category theory, homological algebra, 19 K-theory, 20 Group theory and generalizations, 21 Topological algebraic structures (2010版已停用), 22 Topological groups, Lie groups, 26 Real functions, 27 Analysis (2010版已停用), 28 Measure and integration, 30 Functions of a complex variable, 31 Potential theory, 32 Several complex variables and analytic spaces, 33 Special Functions, 34 Ordinary differential equations, 35 Partial differential equations, 36 Differential equations, operational calculus, 37 Dynamical systems and ergodic theory, 39 Finite differences and functional equations, 40 Sequences, series, summability, 41 Approximations and expansions, 42 Fourier analysis, 43 Abstract harmonic analysis, 44 Integral transforms, operational calculus, 45 Integral equations, 46 Functional analysis, 47 Operator theory, 48 Geometry (2010版已停用), 49 Calculus of variations and optimal control, 50 Geometry (2010版已停用), 51 Geometry, 52 Convex and discrete geometry, 53 Differential geometry, 54 General topology, 55 Algebraic topology, 56 Topology (2010版已停用), 57 Manifolds and cell complexes, 58 Global analysis, analysis on manifolds, 60 Probability theory and stochastic processes, 62 Statistics, 65 Numerical analysis, 68 Computer science, 69 General applied mathematics (2010版已停用), 70 Mechanics of particles and systems, 71 Mechanics (2010版已停用), 73 Mechanics of solids (2010版已停用), 74 Mechanics of deformable solids, 76 Fluid mechanics, 78 Optics, electromagnetic theory, 79 Mathematical physics, physical applications, 80 Classical thermodynamics, heat transfer, 81 Quantum theory, 82 Statistical mechanics, structure of matter, 83 Relativity and gravitational theory, 84 Relativity, astronomy (2010版已停用), 85 Astronomy and astrophysics, 86 Geophysics, 90 Operations research, mathematical programming, 91 Game theory, economics, social and behavioral sciences, 92 Biology and other natural sciences, behavioral sciences, 93 Systems theory, control, 94 Information and communication, circuits, 97 Mathematics education. The dropdown menu is highlighted with a red box.