INSTRUCTIONS TO AUTHORS

A. General

Manuscripts should be submitted in duplicate. They should preferably be written in English; papers in French or German are also accepted.

Manuscripts must be in their **final form,** typed on one side of each sheet only, with double spacing and wide margins. Formulae should be typewritten whenever possible. Mimeographed copies are not acceptable unless clearly legible.

Please include a "Note for the Printer" explaining markings used. See suggestion overleaf.

To speed up publication, authors will receive **only one set of proofs:** provisionally numbered page proofs. Authors are requested to **correct typographical errors only;** they will be charged for corrections involving changes, additions or deletions to the original manuscript.

Diagrams should be submitted on separate sheets, not included in the text. They should be drawn in Indian ink in clean uniform lines, the whole about twice the size of the finished illustration. Inscriptions should allow for the figure 1, for example, to be about 2 mm high in the final version (i.e. 4 mm for reduction $\times\frac{1}{2}$). The author should mark in the margin of the manuscript where diagrams may be inserted.

Footnotes, other than those which refer to the title heading, should be numbered consecutively and placed at the foot of the page to which they refer (not at the end of the article).

Please give on the first page of the manuscript a **running head** (condensed title), which should not exceed 70 letters including spaces.

References to the literature should be listed at the end of the manuscript. The following information should be provided for **journal articles:** names and initials of all authors, name of the journal, volume, first and last page numbers and year of publication. References to **books** should include name(s) of author(s), full title, edition, place of publication, publisher and year of publication.

Examples

Bombieri, E., Giusti, E.: Inventiones math. **15**, 24–46 (1971)

Tate, J.T.: p-Divisible groups. In: Proceedings of a conference on local fields, pp. 158–183. Berlin-Heidelberg-New York: Springer 1967

B. Marking

1. Text

The words **"Theorem", "Lemma", "Corollary", "Proposition"** etc. are normally printed in **boldface,** followed by the formulation in italics (to be underlined in the manuscript).
The words "*Proof*", "*Remark*", "*Definition*", "*Note*" etc. are printed in *italics* with the formulation in ordinary typeface.
Words or sentences to be set in italics should be marked by single underlining.

2. Formulae

Letters in formulae are normally printed in italics, figures in ordinary typeface.
It will help the printer if in doubtful cases the position of indices and exponents is marked thus: $b_{\uparrow}$, $a^{\Downarrow}$. Spacing of indices and exponents must be specially indicated ($A_{m\ n}^{n\ m}$) otherwise they will be set (A_{mn}^{nm}).
Underlining for special alphabets and typefaces should be done according to the following code:

single underlining:	small letter
double underlining:	capital letter
brown:	boldface headings, boldface letters in formulae
yellow:	upright (abbreviations e.g. Re, Im, log, sin, ord, id, lim, sup, etc.)
red:	Greek
blue:	Gothic
green:	Script
violet:	the numeral 1, and zero (to distinguish them from the small letter *l* and the capital letter *O*)

The following are frequently confused:

$\cup$, $\mathbf{u}$, $\bigcup$, U; $\circ, o, O, 0$; $\times, x, X, \kappa$; $\vee, v, \nu$; $\theta, \Theta, \phi, \varphi, \Phi, \emptyset$; ψ, Ψ; $\varepsilon, \in$;

a', a^1; the symbol *a* and the indefinite article a;

also the handwritten Roman letters:

c, C; e, l; I, J; k, K; o, O; p, P; s, S; u, U; v, V; w, W; x, X; z, Z;

Please take care to distinguish them in some way

C. Examples

1. Special alphabets or typefaces

Script	$\mathscr{A}, \mathscr{B}, \mathscr{C}, \mathscr{D}, \mathscr{E}, \mathscr{F}, \mathscr{G}, \mathscr{H}, \mathscr{I}, \mathscr{J}, \mathscr{K}, \mathscr{L}, \mathscr{M}, \mathscr{N}, \mathscr{O}, \mathscr{P}, \mathscr{Q}, \mathscr{R}, \mathscr{S}, \mathscr{T}, \mathscr{U}, \mathscr{V}, \mathscr{W}, \mathscr{X}, \mathscr{Y}, \mathscr{Z}$ $a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z$
Sanserif	A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z
Gothic	$\mathfrak{A}, \mathfrak{B}, \mathfrak{C}, \mathfrak{D}, \mathfrak{E}, \mathfrak{F}, \mathfrak{G}, \mathfrak{H}, \mathfrak{I}, \mathfrak{J}, \mathfrak{K}, \mathfrak{L}, \mathfrak{M}, \mathfrak{N}, \mathfrak{O}, \mathfrak{P}, \mathfrak{Q}, \mathfrak{R}, \mathfrak{S}, \mathfrak{T}, \mathfrak{U}, \mathfrak{V}, \mathfrak{W}, \mathfrak{X}, \mathfrak{Y}, \mathfrak{Z}$ $\mathfrak{a}, \mathfrak{b}, \mathfrak{c}, \mathfrak{d}, \mathfrak{e}, \mathfrak{f}, \mathfrak{g}, \mathfrak{h}, \mathfrak{i}, \mathfrak{j}, \mathfrak{k}, \mathfrak{l}, \mathfrak{m}, \mathfrak{n}, \mathfrak{o}, \mathfrak{p}, \mathfrak{q}, \mathfrak{r}, \mathfrak{s}, \mathfrak{t}, \mathfrak{u}, \mathfrak{v}, \mathfrak{w}, \mathfrak{x}, \mathfrak{y}, \mathfrak{z}$
Boldface	**A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z** **a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z**
Special Roman	$\mathbb{A}, \mathbb{B}, \mathbb{C}, \mathbb{D}, \mathbb{E}, \mathbb{F}, \mathbb{G}, \mathbb{H}, \mathbb{I}, \mathbb{J}, \mathbb{K}, \mathbb{L}, \mathbb{M}, \mathbb{N}, \mathbb{O}, \mathbb{P}, \mathbb{Q}, \mathbb{R}, \mathbb{S}, \mathbb{T}, \mathbb{U}, \mathbb{V}, \mathbb{W}, \mathbb{X}, \mathbb{Y}, \mathbb{Z}, \mathbb{1}$
Greek	$\Gamma, \Delta, \Theta, \Lambda, \Xi, \Pi, \Sigma, \Phi, \Psi, \Omega$ $\alpha, \beta, \gamma, \delta, \varepsilon, \zeta, \eta, \theta, \vartheta, \iota, \kappa, \lambda, \mu, \nu, \xi, o, \pi, \rho, \sigma, \tau, \upsilon, \varphi, \phi, \chi, \psi, \omega$

2. Notations

preferred form	instead of
$A^*, \tilde{b}, \gamma', \mathfrak{v}, \mathbf{v}$	$\bar{A}, \hat{b}, \check{\gamma}, \vec{v}$
lim sup, lim inf	$\overline{\lim}, \underline{\lim}$
inj lim, proj lim	$\varinjlim, \varprojlim$
$\exp(-(x^2+v^2)/a^2)$	$e^{-\frac{x^2+v^2}{a^2}}$
f^{-1}	$\overset{-1}{f}$

preferred form	instead of
$f: A \to B$	$A \xrightarrow{f} B$
$\dfrac{\cos(1/x)}{(a+b/x)^{1/2}}$	$\dfrac{\cos\dfrac{1}{x}}{\sqrt{a+\dfrac{b}{x}}}$

Mathematics Today – Twelve Informal Essays

Editor: L. A. Steen

1978. 149 figures. Approx. 380 pages
Cloth DM 27.—; US $13.50
ISBN 3-540-90305-4

Mathematics Today is a contemporary, popular account of mathematics, our invisible culture. It is the only book to provide a nontechnical survey of current pure and applied mathematics in the past ten years. In it, leading mathematicians explain the nature and significance of their work, conveying a sense of the methods, accomplishments and challenges of modern mathematics. Accessible to non-specialists and non-mathematicians, **Mathematics Today** offers twelve contemporary views of the man-made mathematical universe and its diverse effects on modern society.

Contents: R. L. Graham, Combinatorial Scheduling Theory. — D. S. Moore, Statistical Analysis of Experimental Data. — M. Davis, What is a Computation? — K. Appel, W. Haken, The Four-Color Problem. — F. C. Hoppensteadt, Mathematical Aspects of Population Biology. — J. L. Alperin, Groups and Symmetry. — F. E. Browder, S. Mac Lane, The Relevance of Mathematics. — A. L. Hammond, Mathematics — Our Invisible Culture. — J. T. Schwartz, Mathematics as a Tool for Economic Understanding. — P. O. Thompson, The Mathematics of Meteorology. — I. Richarts, Number Theory. — R. Penrose, The Geometry of the Universe.

Prices are subject to change without notice

Springer-Verlag Berlin Heidelberg New York

5420/3/2h

Methods of Modern Mathematical Physics

By MICHAEL REED and BARRY SIMON

VOLUME 4: **Analysis of Operators**

CONTENTS: PERTURBATION OF POINT SPECTRA: Finite-dimensional Perturbation Theory. Regular Perturbation Theory. Asymptotic Perturbation Theory. Summability Methods in Perturbation Theory. Spectral Concentration. Resonances and the Fermi Golden Rule. Notes. Problems. SPECTRAL ANALYSIS: The Min-Max Principle. Bound States of Schrödinger Operators I: Quantitative Methods. Bound States of Schrödinger Operators II: Qualitative Theory. Locating the Essential Spectrum I: Weyl's Theorem. Locating the Essential Spectrum II: The HVZ Theorem. The Absence of Singular Continuous Spectrum I: General Theory. The Absence of Singular Continuous Spectrum II: Smooth Perturbations. The Absence of Singular Continuous Spectrum III: Weighted L^2 Spaces. The Spectrum of Tensor Products. The Absence of Singular Continuous Spectrum IV: Dilation Analytic Potentials. Properties of Eigenfunctions. Nondegeneracy of the Ground State. Compactness Criteria and Operators with Compact Resolvent. The Asymptotic Distribution of Eigenvalues. Schrödinger Operators with Periodic Potentials. An Introduction to the Spectral Theory of Non-Self-Adjoint Operators. Notes. Problems.
1978, 416 pp., $34.00/£22.10
ISBN: 0-12-585004-2

VOLUME 3: **Scattering Theory**

CONENTS: An Overview of Scattering Phenomena. Classical Particle Scattering. The Basic Principles of Scattering in Hilbert Space. Quantum Scattering I: Two-Body Case. Quantum Scattering II: N-Body Case. Quantum Scattering III: Eigenfunction Expansions. Quantum Scattering IV: Dispersion Relations. Quantum Scattering V: Central Potentials. Long Range Potentials. Optical and Acoustical Scattering I: Schrödinger Operator Methods. Appendix: Trace Class Properties of Green's Functions. Optical and Acoustical Scattering II: The Lax-Phillips Method. The Linearized Boltzmann Equation. Nonlinear Wave Equations. Spin Wave Scattering. Quantum Field Scattering I: The External Field. Quantum Field Scattering II: The Haag-Ruelle Theory. (The above contents are tentative.)
1978, about 375 pp., in preparation
ISBN: 0-12-585003-4

VOLUME 2: **Fourier Analysis, Self-Adjointness**
1975, 361 pp., $28.50/£18.55
ISBN: 0-12-585002-6

VOLUME 1: **Functional Analysis**
1972, 325 pp., $17.95/£12.35
ISBN: 0-12-585001-8

To obtain examination copies of Volume I please write to the Textbook Department, Academic Press, Inc. Please give the title and enrollment of the course for which the books will be considered.
Send payment with order and save postage and handling charge.
Prices are subject to change without notice.

ACADEMIC PRESS, INC.
A Subsidiary of
Harcourt Brace Jovanovich, Publishers
111 FIFTH AVENUE, NEW YORK, N.Y. 10003
24-28 OVAL ROAD, LONDON NW1 7DX

Communications in Mathematical Physics

Chief Editor J. Glimm, New York, NY

Editorial Board
H. Araki, Kyoto
R. Geroch, Chicago, IL
J. Ginibre, Orsay
R. Haag, Hamburg
A. Jaffe, Cambridge, MA
J. L. Lebowitz, New Brunswick, NJ
E. Lieb, Princeton, NJ
J. Moser, New York, NY
R. Stora, Geneva

Advisory Board
R. L. Dobrushin, Moscow
G. Gallavotti, Rome
W. Hunziker, Zürich
M. C. Polivanov, Moscow
D. Ruelle, Bures-sur-Yvette
A. S. Wightman, Princeton, NJ

Responsible for advertisements L. Siegel, Kurfürstendamm 237, D-1000 Berlin 15
Telephone: (030) 8821031, Telex 01-85411
Springer-Verlag Berlin Heidelberg New York
Printers Brühlsche Universitätsdruckerei, Lahn-Gießen
Printed in Germany

© by Springer-Verlag Berlin Heidelberg 1978