

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_j , $a^{\check{v}}$. Spacing of indices and exponents must be specially indicated (A_m^n) otherwise they will be set (A_m^n).

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:

$\cup, u, \cup, U; \circ, o, O, 0; \times, x, X, \kappa; \vee, v, v; \theta, \Theta, \phi, \phi, \Phi, \emptyset; \psi, \Psi; \varepsilon, \epsilon;$

$a', a^1;$ 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	<i>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</i> <i>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</i>
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	U, 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
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	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, 1
Greek	$\Gamma, \Delta, \Theta, \Lambda, \Xi, \Pi, \Sigma, \Phi, \Psi, \Omega$ $\alpha, \beta, \gamma, \delta, \varepsilon, \zeta, \eta, \theta, \vartheta, \iota, \kappa, \lambda, \mu, \nu, \xi, \omicron, \pi, \rho, \sigma, \tau, \upsilon, \varphi, \phi, \chi, \psi, \omega$

2. Notations

preferred form	instead of	preferred form	instead of
$A^*, b^{\sim}, \gamma', v, v$	$\bar{A}, \hat{b}, \check{\gamma}, \check{v}$	$f: A \rightarrow B$	$A \xrightarrow{f} B$
lim sup, lim inf	$\bar{\lim}, \underline{\lim}$	$\cos(1/x)$	$\cos \frac{1}{x}$
inj lim, proj lim	$\lim_{\rightarrow}, \lim_{\leftarrow}$	$\frac{\cos(1/x)}{(a+b/x)^{1/2}}$	$\sqrt{a + \frac{b}{x}}$
$\exp(-(x^2+y^2)/a^2)$	$e^{-\frac{x^2+y^2}{a^2}}$		
f^{-1}	f^{-1}		

Springer Mathematics

Applied Mathematical Sciences

Vol. 16: **S. Lefschetz, Applications of Algebraic Topology**
Graphs and Networks. The Picard-Lefschetz Theory and Feynman Integrals. 52 figures. VIII, 189 pages 1975. DM 22,10; US \$9.10
ISBN 3-540-90137-X

Vol. 17: **L. Collatz, W. Wetterling, Optimization Problems**
Translated from the German by P. Wadsack
61 figures. X, 356 pages. 1975
DM 33,80; US \$13.90
ISBN 3-540-90143-4

Ergebnisse der Mathematik und ihrer Grenzgebiete

Band 84: **J. H. Wells, L. R. Williams, Embeddings and Extensions in Analysis**
Approx. 125 pages. 1975
Cloth DM 34,90; US \$14.40
ISBN 3-540-07067-2

Band 85: **W. Y. Hsiang, Chromology Theory of Topological Transformation Groups**
X, 164 pages. 1975
Cloth DM 58,—; US \$23.80
ISBN 3-540-07100-8

Band 86: **A. M. Olevskii, Fourier Series with Respect to General Orthogonal Systems**
Translated from the Russian by B. P. Marshall, H. J. Christoffers
IX, 136 pages. 1975
Cloth DM 78,—; US \$32.00
ISBN 3-540-07103-2

Band 87: **C. Berg, G. Forst, Potential Theory on Locally Compact Abelian Groups**
VII, 197 pages. 1975
Cloth DM 59,—; US \$24.20
ISBN 3-540-07249-7

Ernst Eduard Kummer Collected Papers

Edited by A. Weil

Vol. 2: **Function Theory, Geometry and Miscellaneous**
1 portrait. XI, 887 pages. 1975
Cloth DM 98,—; US \$40.20
ISBN 3-540-06836-8

Graduate Texts in Mathematics

Vol. 23: **W. Greub, Linear Algebra**
4th edition. XVII, 451 pages. 1975
Cloth DM 43,80; US \$18.00
ISBN 3-540-90110-8

Vol. 24: **R. B. Holmes, Geometric Functional Analysis and Its Applications**
VII, 485 pages. 1975
Cloth DM 39,10; US \$16.10
ISBN 3-540-90136-1

Vol. 25: **E. Hewitt, K. Stromberg, Real and Abstract Analysis**
A Modern Treatment of the Theory of Functions of a Real Variable
3rd printing
8 figures. XII, 476 pages. 1975
Cloth DM 39,10; US \$16.10
ISBN 3-540-90138-8

Vol. 27: **J. L. Kelley, General Topology**
Unchanged reprint
XIV, 298 pages. 1975
Cloth DM 34,50; US \$14.20
ISBN 3-540-90125-6
(Originally published by
Van Nostrand Publishing Company)

Vol. 28: **O. Zariski, P. Samuel**
Commutative Algebra I
Corrected reprint
Approx. 340 pages. 1975
Cloth DM 34,50; US \$14.20
ISBN 3-540-90089-6
(Originally published by
Van Nostrand Publishing Company)

Vol. 31: **N. Jacobson, Lectures in Abstract Algebra**
Vol. 2: **Linear Algebra**. Reprint
XII, 280 pages. 1975
Cloth DM 34,50; US \$14.20
ISBN 3-540-90123-X
(Originally published by
Van Nostrand Publishing Company)

Die Grundlehren der mathematischen Wissenschaften

Band 80: **G. Pickert, Projektive Ebenen**
2. Auflage. 67 Abbildungen
IX, 371 Seiten. 1975
Gebunden DM 98,—; US \$42.00
ISBN 3-540-07280-2

Band 114: **S. Mac Lane, Homology**
3rd corrected printing. 7 figures
X, 422 pages. 1975
Cloth DM 62,—; US \$25.50
ISBN 3-540-03823-X

Band 144: **A. Weil, Basic Number Theory**
3rd edition. XVIII, 325 pages. 1974
Cloth DM 48,10; US \$19.80
ISBN 3-540-06935-6

Band 217: **B. Stenström, Rings of Quotients**
An Introduction to Methods of Ring Theory. VIII, 309 pages. 1975
Cloth DM 92,—; US \$37.80
ISBN 3-540-07117-2

Band 218: **I. I. Gihman, A. V. Skorohod, The Theory of Stochastic Processes II**
Translated from the Russian by S. Kotz. VII, 441 pages. 1975
Cloth DM 112,—; US \$46.00
ISBN 3-540-07247-0

Studies in the History of Mathematics and Physical Sciences

Editors: M. J. Klein, G. J. Toomer

Vol. 1: **O. Neugebauer, A History of Ancient Mathematical Astronomy**
(In 3 parts, not available separately)
619 figures. 9 plates
XXIII, V, IV, 1456 pages. 1975
Cloth DM 290,—; US \$118.90
Prepublication price valid until 31.12.1975
Cloth DM 232,—; US \$95.20
ISBN 3-540-06995-X

Prices are subject to change without notice



Springer-Verlag
Berlin Heidelberg New York

Communications in
**Mathematical
Physics**

Volume 46 Number 2 1976

Contents

- J. M. Chadam The Time-dependent Hartree-Fock Equations with
Coulomb Two-Body Interaction 99
- J. H. Lowenstein,
W. Zimmermann Infrared Convergence of Feynman Integrals for
the Massless A^4 -Model 105
- S. Nagamachi,
N. Mugibayashi Hyperfunction Quantum Field Theory 119
- N. M. J. Woodhouse An Application of Morse Theory to Space-Time
Geometry 135
- F. Bentosela Scattering from Impurities in a Crystal 153
- R. S. Ellis,
J. L. Monroe,
C. M. Newman The GHS and Other Correlation Inequalities for a
Class of Even Ferromagnets 167
- J. Kijowski,
W. Szczyrba A Canonical Structure for Classical
Field Theories 183
- S. W. Hawking Erratum 206

Indexed in Current Contents

Responsible for advertisements

Springer-Verlag
Printers
Printed in Germany

L. Siegel, Kurfürstendamm 237, D-1000 Berlin 15
Telephone: (0 30) 8 82 10 31, Telex 01-85 411
Berlin Heidelberg New York
Brühlsche Universitätsdruckerei, Gießen
© by Springer-Verlag Berlin Heidelberg 1976