Instructions to Authors

A. General

In upper right corner of title page **write by hand** "For CMP".

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.

Equations should be typewritten whenever possible. Even if you use a sophisticated typewriter, some parts of your manuscript will have to be marked to avoid misunderstandings and mistakes. If there is no difference in size, special attention should be given to the placing of subscripts and superscripts so that they are recognizable as such. Please avoid multilevel formulas, subscripts, or superscripts, whenever possible (see overleaf).

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 consequently 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. It is suggested that authors give complete titles of articles referred to. References to **books** should include name(s) of author(s), full title, edition, place of publication, publisher and year of publication.

Examples

Haag, R., Swieca, J.A.: When does a quantum field theory describe particles? Commun. Math. Phys. **1**, 308–320 (1965)

Glimm, J., Jaffe, A.: Quantum physics. A functional integral point of view. Berlin, Heidelberg, New York: Springer 1981

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 by the author 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. Formulas

Letters in formulas 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}^{mm}).

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 formulas
yellow:	upright
	(abbreviations e.g. Rc, 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)**
orange:	Special Roman

The following are frequently confused:

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

$a', a^1;$ 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	$\mathfrak{A}, \mathfrak{B}, \mathfrak{C}, \mathfrak{D}, \mathfrak{E}, \mathfrak{F}, \mathfrak{G}, \mathfrak{H}, \mathfrak{I}, \mathfrak{J}, \mathfrak{K}, \mathfrak{L}, \mathfrak{M}, \mathfrak{N}, \mathfrak{O}, \mathfrak{P}, \mathfrak{Q}, \mathfrak{R}, \mathfrak{S}, \mathfrak{T}, \mathfrak{U}, \mathfrak{V}, \mathfrak{W}, \mathfrak{X}, \mathfrak{Y}, \mathfrak{Z}$
	$\mathfrak{a, b, c, d, e, f, g, h, i, j, k, l, m, n, o, p, q, r, s, t, u, v, w, x, y, z}$
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	$\mathbb{A}, \mathbb{B}, \mathbb{C}, \mathbb{D}, \mathbb{E}, \mathbb{F}, \mathbb{G}, \mathbb{H}, \mathbb{I}, \mathbb{J}, \mathbb{K}, \mathbb{L}, \mathbb{M}, \mathbb{N}, \mathbb{O}, \mathbb{P}, \mathbb{Q}, \mathbb{R}, \mathbb{S}, \mathbb{T}, \mathbb{U}, \mathbb{V}, \mathbb{W}, \mathbb{X}, \mathbb{Y}, \mathbb{Z}, \mathbb{1}$
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		preferred form	instead of
$A^*, \tilde{b}, \gamma', \mathbf{v}$	$\bar{A}, \hat{b}, \dot{\gamma}, \vec{v}$		$f: A \to B$	$A \xrightarrow{f} B$
lim sup, lim inf	$\overline{\lim}, \underline{\lim}$			
inj lim, proj lim	$\underrightarrow{\lim}, \underleftarrow{\lim}$		$\dfrac{\cos(1/x)}{(a+b/x)^{1/2}}$	$\dfrac{\cos \dfrac{1}{x}}{\sqrt{a + \dfrac{b}{x}}}$
$\exp(-(x^2+y^2)/a^2)$	$e^{-\frac{x^2+y^2}{a^2}}$			
f^{-1}	$\overset{-1}{f}$			

C. H. Wilcox

Scattering Theory for Diffraction Gratings

Contents: Introduction. – Physical Theory. – Mathematical Theory. – References. – Index.

This book is an introduction to the theory of the scattering of transient electromagnetic and acoustic fields by diffraction gratings, a classical subject with its origins in 19th century optics and modern applications to topics such as optical waveguides, underwater acoustics and the scattering of atomic beams by crystals. The first part of the book contains a concise summary of the physical theory, its second part is devoted to a complete presentation, with proofs, of the mathematical theory of diffraction gratings including a method for calculating the scattering of transient signals with prescribed sources.

Scattering Theory for Diffraction Gratings is of interest to applied physicists, engineers and mathematicians interested in spectral analysis.

Communications in
Mathematical
Physics

Chief Editor   A. Jaffe, Cambridge, MA