

PHYSICAL REVIEW B INFORMATION FOR CONTRIBUTORS

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Manuscripts may be **submitted** by a variety of electronic modes (including via e-print servers, direct Web upload, and email), or by conventional mail, but not by fax. Interactive **submission forms**, available on our Web server, are an integral part of the submission process for the e-print and Web modes, and are strongly recommended for email and conventional-mail submission. These forms aid authors in supplying all the information needed in a structured format which furthers efficient processing; they also provide a location for additional “free form” information. [For authors without Web browsers which support forms, noninteractive versions of the submission forms are available via ftp to aps.org in the /pub/jrnls directory as the sub_prb files (include filename suffix .asc, .tex, or .ps), or by request to the Editorial Office.]

Please specify the author to whom correspondence should be addressed, and give all available communications information for this individual (postal and email addresses, phone and fax numbers), since in various circumstances they may all be useful. Please specify journal and section to which the paper is submitted, and give PACS (Physics and Astronomy Classification Scheme) index categories if possible. (The scheme is available on our Web server, and also via ftp to aps.org as the file pacs_99.asc in the /pub/pacs directory.) If an important subject of your paper cannot be appropriately classified in the PACS scheme, please give an appropriate keyword or phrase, and indicate approximately where in the scheme this topic would be best placed.

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Manuscripts and figures are *not routinely returned* to authors. Authors should indicate (preferably on initial submital) if they want the manuscript and/or figures returned when correspondence is sent during the editorial process, and/or after a final decision has been made.

Electronic submissions may be formatted in REVTeX (preferred), LaTeX, Harvmac, or Plain TeX. The file must be in ASCII containing no control codes, with line lengths of 80 characters or less. All textual material of the paper (including tables, captions, etc.) should be in electronic form, as a single file. The file should produce double-spaced output. Properly prepared electronic submissions are eligible for a **publication-charge discount**, whether or not they also qualify for the compuscript-conversion production program. See paragraph beginning with “compuscripts” (below).

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Electronic-mail submissions (and inquiries about them) should be sent to the Internet address prbtex@aps.org. For the initial submission, use as the subject “submit” followed by the three-letter abbreviation for the name of the journal (prb) and the last name of the first author; for example, “submit prb jones” or “submit PRB Jones.” Include the filled-out submission form (or the equivalent information, including journal, section, postal address, etc.) in the first part of the electronic-mail message. Receipt of an electronic-mail submission will be acknowledged within 24 hours. Copies of the manuscript should not be sent by regular mail (only original figures) unless the electronic transmission has not been successful.

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mission as being part of an electronic-mail submission. On resubmission, it is only necessary to resend your figures if the originals in our file are no longer valid.

Manuscripts sent by **conventional mail** should be submitted in triplicate to the Editors, Physical Review, 1 Research Road, Box 9000, Ridge, NY 11961-9000. The manuscript, including the abstract, references, and captions, should be neatly printed in English, on good letter-size (e.g., $8\frac{1}{2}\times 11$ in. or A4) white paper with ample margins. (The first copy, used for production purposes if the paper is accepted for publication, must be printed on one side of the paper only; additional copies, used for review purposes, may be printed on both sides of the paper.) The type size and line spacing should be sufficient to accommodate editorial markings and should be legible to our keyboarders (no more than three lines per inch and no more than 88 characters per 6 inches). It should be carefully proofread by the author. Poor reproductions are unacceptable, as are unclear or excessive handwritten insertions.

Compuscripts are author-supplied computer files that can be used for production essentially as supplied. (Some minor style modifications may be made if needed.) If the paper is accepted for publication, the file is converted to production format and coding (eventually SGML), from which base the journal pages are composed. Appropriate REVTeX files are eligible (the other electronic-submission formats are only useful for the editorial-review process). Questions about file eligibility should be directed to prbtex@aps.org. Papers intended for the compuscript production program should be submitted and resubmitted *only electronically*. PostScript figures may be used directly (electronically) in the production composition process.

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An information and instruction booklet regarding electronic submissions and compuscripts is available via ftp to aps.org in the /pub/jrnls/ directory as the compu_inform_pr files (include filename suffix .asc, .ps, or .tex).

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For **general format and style** consult recent issues of this journal and the *Physical Review Style and Notation Guide*, available via ftp to aps.org in the /pub/jrnls directory as the style_guide files (include filename suffix .pdf, .ps, or .tex). Additional style guidelines can be found in the Fourth Edition of the *AIP Style Manual*, which may be obtained for \$10.00 (prepaid) from Springer-Verlag, P.O. Box 2485, Secaucus, NJ 07096-2485.

The **title** should be concise but informative enough to facilitate information retrieval. The **abstract** should be self-contained (contain no footnotes). It should be adequate as an index (giving all subjects, major and minor, about which new information is given) and as a summary (giving the conclusions and all results of general interest in the article). It should be about 5% of the length of the article, but less than 500 words.

Notation should be clear, compact, and consistent with standard usage. **Equations** should be neatly formatted, punctuated, and aligned to bring out their structure, and numbered on the right. (a) Diacritical marks (tildes, etc.) can be put over any symbol, including indices. (b) Three-vectors are generally set in roman boldface type. More general vectors, matrices, etc., are usually set in lightface italic type, although boldface may alternatively be used. (c) Be careful when using the solidus (/) in fractions. For example, $1/2a$ means $1/(2a)$, not $(1/2)a$. Use appropriate bracketing if needed to ensure clarity.

References and footnotes to text material must be combined in a single list, numbered consecutively in their order of first appearance in the paper, and placed in a double-spaced list at the end of the text material. References within tables should be designated by lower-case letter superscripts and given at the end of the table.

For the proper form, see the *Physical Review Style and Notation Guide* and recent issues of this journal. The names of all authors of works cited should be given in the references. The use of “*et al.*” is discouraged, and should **never** be used if the number of authors is less than four. When reference is made to material not available in the published literature, it is denoted as “unpublished.” References to classified reports or other documents with restricted circulation should be avoided. It is important to confirm the accuracy of bibliographic information in references. This has become more important now that the journal is online. Hyperlinks will be programmed to enable readers to “click” on references and jump directly to the material cited. If your reference citations are incorrect or incomplete (e.g., missing author name, or an incorrect volume number or page), the associated hyperlinks may fail, and the usefulness of your paper in the online environment may be diminished. Since at the present time such links work only from the reference section, work cited anywhere in the paper, including in figure and table captions and in “Note(s) added,” should be included in the reference section.

Footnotes to an author’s name or address should be limited to those useful for location of, or communication with, an author. Footnotes giving electronic addresses (e.g., email, fax, or Web) of a corresponding author are encouraged. All information concerning research support should appear in the acknowledgments.

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The decision on whether results should be published in long tables depends on the precision of the data, i.e., whether they can be read accurately enough from a figure, and on how many readers are likely to use the numbers relative to the space needed in the journal. If additional numerical data can be obtained from a data center, from the author, or from another source either as tables or on tape, indicate how and in what format they can be obtained.

Figures should be planned for the column width of the *Physical Review* (approximately 8.6 cm, or $3\frac{3}{8}$ in.). In some cases where the figures contain a great deal of detail, $1\frac{1}{2}$ or 2 columns may be used. Wasted space at the top and bottom should be avoided. Carefully prepared figures, suitable for digital scanning, are required (original India-ink drawings or glossy prints; computer-generated figures, if of sufficient quality, are acceptable). Figures must have a clear background and unbroken lines with as much black-white contrast as possible. *Final-journal-size* originals or prints are preferable to oversized originals. Avoid small open symbols which tend to fill in upon reproduction, small dots and decimal points, and shading or cross-hatching that is not coarse enough to withstand reproduction. The lettering and plotted

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