

LASER AND PARTICLE BEAMS

Pulse Power, High Energy Densities, Hot Dense Matter, and Warm Dense Matter

INSTRUCTIONS FOR AUTHORS

AIMS AND SCOPE

Laser and Particle Beams is an international journal that covers the generation, and the interaction with matter, of high intensity laser and particle beams. It also covers the physics of systems with high energy densities. Specific fields of interest include nuclear fusion, especially inertial confinement, magnetic confinement, diagnostics, material treatment, laboratory astrophysics, plasmas and spectroscopy at extreme conditions, physical properties of hot dense matter and intense particle beams and optical (laser) beams from the microwave to the X-ray region. The exploration of these fields and their new physics, including nonlinear and nonclassical phenomena, should find a forum in this journal. As well as publishing original articles, the journal also publishes occasional review articles, surveys of research at particular laboratories and reviews of recent books.

ORIGINALITY AND COPYRIGHT

To be considered for publication in *Laser and Particle Beams* a manuscript cannot have been published previously, nor can it be under review for publication elsewhere. Papers with multiple authors are reviewed with the assumption that all authors have approved the submitted manuscript and concur in its submission to *Laser and Particle Beams*. A Transfer of Copyright Agreement must be executed before an article can be published. Government authors whose articles were created in the course of their employment must so certify in lieu of copyright transfer. Authors are responsible for obtaining written permission from the copyright owners to reprint any previously published material included in their article.

MANUSCRIPT SUBMISSION AND REVIEW

Manuscripts must be written in English. All manuscripts will be referred to acknowledged experts in the subject. Only those receiving favorable recommendations from the referees will be accepted for publication.

All manuscripts must be submitted online at <http://www.edmgr.com/lpb>

In order to submit a manuscript, authors need an account on the online system. If you don't have an account yet, click the "Register Now" link on the login page. If you are unsure whether you have an account or have forgotten your login details, please use the link "Send Username/Password" and follow the instructions – your login details will be e-mailed to you immediately if you are already registered. Please do NOT create another account on the system if you have forgotten your password.

The manuscript can be submitted in Microsoft Word (MAC or IBM) or in any form of TeX. This increases the speed at which the manuscript can be prepared for publication (typeset). Saving your document in any other format will not be helpful to the typesetter.

MANUSCRIPT PREPARATION AND STYLE

Paper should be typed in *double* spacing throughout, including tables, footnotes, references and legends to tables and figures. There should be a margin of at least 2.5 cm all around. The position of tables and figures should be clearly indicated, in sequence, in the text. Tables, footnotes and legends to figures should be uploaded as separate files. Where it is essential for clear cross-referencing, particularly in mathematically-orientated material, paragraphs and subparagraphs may be numbered, and the decimal system should be used, i.e. 1.1.1., 1.1.2., etc. For Original Studies, Reviews and Commentaries, a short running title of not more than 40 characters (including spaces) should be indicated if the full title is longer than this. The name of the laboratory where the work has been carried

out should be indicated on the title page and the full postal address for correspondence should be included on a separate page. Numbers should be spelled out when they occur at the beginning of a sentence; use Arabic numerals elsewhere.

MANUSCRIPT ELEMENTS AND ORDER

Unless there are obvious and compelling reasons for variation (e.g. review articles, Symposium Reports), manuscripts should be organized as follows:

Title page. This is page 1. The title should be concise, informative, and free of abbreviations, chemical formulae, technical jargon, and esoteric terms. This page should include (a) the article's full title, (b) names and affiliations of all authors, (c) the name, mailing address, and telephone number of the corresponding author, (d) the address for reprint requests if different from that of the corresponding author, (e) a short title of 40 characters or less, and (f) a list of the number of manuscript pages, number of tables, and number of figures.

Abstract and keywords page. This is page 2 and should include (a) the article's full title, (b) an abstract of no more than 300 words, and (c) up to 5 keywords or phrases that reflect the content and major thrust of the article. The abstract should give a succinct account of the objective, methods, results, and significance of the subject matter.

Introduction. This section begins on page 3 and should clearly state the objective of the research in the context of previous work bearing directly on the subject. An extensive review of the literature is not usually appropriate.

Citations in text. Customary abbreviations will be accepted and the authors are recommended to employ *Système Internationale* (SI/metric) units. Special and unusual symbols should be clearly identified, especially if handwritten. Spell out acronyms at first use, but use only acronyms thereafter. All equipment supplies and products stated in the article should have the manufacturer name and location identified at first mention.

Tables. Tables should be numbered consecutively with Arabic numerals and each should be typed double-spaced on a separate sheet. All tables are to be grouped together after the references. A short explanatory title and column headings should make the table intelligible without reference to the text. All tables must be cited and their approximate positions indicated in the text.

Figures and legends. Figures should be supplied no larger than 8×10^7 (approx. 200×250 mm) and must be camera-ready. Explanation and keys should, as far as possible, be placed in the legends. Figures should be composed to occupy a single column (8.3 cm) or two columns (17 cm) after reduction. Diagrams and illustrations must have a professional appearance and be typed or drawn with sharp, black lettering to permit reduction. To assure legibility, letters, numbers, and symbols on figures should have a minimum height of 1 mm when reduced. Figures should be separate and not incorporated into the text copy.

Artwork should normally be in black and white; if authors have color figures, the publisher will provide a price quotation for the additional production costs. Each figure must be cited and its approximate position clearly indicated within the text.

Figures must be numbered consecutively with Arabic numerals and be accompanied by a descriptive caption typed double-spaced on a separate sheet. The captions, collected at the end of the manuscript, should concisely describe the figure and identify any symbols and/or calibration bars.

References. Entries should be listed alphabetically by lead author at the end of the paper. All authors' names should be included, followed by the year of publication, the full title of the journal, volume, issue number, and inclusive page numbers. For books, the full title should be given, followed by the editors, volume number (if any), page numbers, publisher

and place of publication. Citations in the text should read: Brown and Smith (1973), but (Brown & Smith, 1973). Where there are more than two authors the citation should read: Brown *et al.* (1973). The conventional Brown (1973a), Brown (1973b) should be used where more than one paper by the author(s) has appeared in the same year. Brief examples:

Journal

BRUNEL, F. (1987). Not-so-resonant, resonant absorption. *Phys. Rev. Lett.* **59**, 52–55.

Magazine

SEGRE, M.A. & PITTS, B.D. (1992, Sept.). Physics of Laser Plasma Interactions. *Fusion Energy* **A13**, 98–109.

Chapter in an Edited Book

LANGDON, C.D., FRAY, E. & GLENN, J. (1993). Plasma equilibrium in a magnetic field. In *Reviews of Plasma Physics* (Gold, H. and Yen, S., Eds.), Vol. 2, pp. 45–78. New York: Elsevier.

Entire Book

ARNOLD, C.D., FRAY, E. & GLENN, J. (1993). *Physics of Gravitating Systems* (Gray, H. and Quinn, S., Eds.). New York: John Wiley & Sons.

Proceedings

CLIFFE, K.A., KOBINE, J.J. & MULLIN, T. (1992). The role of anomalous modes in the Taylor flow problem. *Proc. Roy. Soc. London A* **439**, 341–357.

Proceedings with Publisher Noted

MITTAL, S. & FRAY, F. (1989). Laser driven instabilities in nuclear plasmas. *Proc. Eleventh Int. Joint Conf. of Laser Produced Plasmas*, pp. 1395–1401. Los Altos, CA: Morgan Kaufmann.

Report

BIRNEY, A.J. & HALL, M.M. (1981). Early identification of flaws in Machine Design. Report No. 81–1501. Cambridge, MA: Massachusetts Institute of Technology.

Thesis

LEE, M.C. & RIEDEL, J.D. (1991). *Shock generation in a realistic equation of state model*. PhD Thesis. Stanford, CA: Stanford University Press.

The alphabetical list of references begins a new page, and must be typed double-spaced. Each in-text citation must have a corresponding reference and vice versa. List works by different authors who are cited within the same parentheses in chronological order, beginning with the earlier work. Journal titles should not be abbreviated. Only published articles and articles in press should appear in this list. Responsibility for the accuracy of references cited lies with the authors.

Author biographies. Brief author biographies will be printed at the end of each book review; they should not exceed 100 words for each author.

COPYEDITING AND PAGE PROOFS

The publisher reserves the right to copyedit manuscripts to conform to the style of *Laser and Particle Beams*. The corresponding author will receive page proofs for final proof-reading. No rewriting of the final accepted manuscript is permitted at the proof stage, and substantial changes may be charged to the authors.

OFFPRINTS

The corresponding author will receive a high-quality PDF of their article. Offprints can be ordered at the proof stage.

LASER AND PARTICLE BEAMS

Pulse Power, High Energy Densities, Hot Dense Matter, and Warm Dense Matter

Volume 29

September 2011

Number 3

CONTENTS

Editorial

- HEINRICH HORA 275 Distinguished celebration for Professor Georg H. Miley by the University of Illinois, Urbana, Illinois, USA

Original Articles

- Y. Y. LAU, SIMON S. YU, JOHN J. BARNARD, AND PETER A. SEIDL 279 Final compression beamline systems for heavy ion fusion drivers
- X.P. ZHU, F.G. ZHANG, Y. TANG, AND M.K. LEI 283 Phase transformation under beam-target interactions during high-intensity pulsed ion beam irradiation at low pressure
- ARVINDER SINGH AND NAVPREET SINGH 291 Relativistic guidance of an intense laser beam through an axially non-uniform plasma channel
- ZHANG-HU HU, YUAN-HONG SONG, Z. L. MIŠKOVIĆ, AND YOU-NIAN WANG 299 Energy dissipation of ion beam in two-component plasma in the presence of laser irradiation
- GAURAV MISHRA, AMOL R. HOLKUNDKAR, AND N.K. GUPTA 305 Effect of laser pulse time profile on its absorption by argon clusters
- M. SHOUCRI, X. LAVOCAT-DUBUIS, J.-P. MATTE, AND F. VIDAL 315 Numerical study of ion acceleration and plasma jet formation in the interaction of an intense laser beam normally incident on an overdense plasma
- ASHOK KUMAR AND A.L. VERMA 333 Nonlinear absorption of intense short pulse laser over a metal surface embedded with nanoparticles
- MIKHAIL L. SHMATOV 339 Scattering of carbon ions in the material of the protective membrane of a fast ignition, indirect compression target without cone
- C.M. BRENNER, J.S. GREEN, A.P.L. ROBINSON, D.C. CARROLL, B. DROMEY, P.S. FOSTER, S. KAR, Y.T. LI, K. MARKEY, C. SPINDLOE, M.J.V. STREETER, M. TOLLEY, C.-G. WAHLSTRÖM, M.H. XU, M. ZEPF, P. MCKENNA, AND D. NEELY 345 Dependence of laser accelerated protons on laser energy following the interaction of defocused, intense laser pulses with ultra-thin targets
- H. HORA, G.H. MILEY, K. FLIPPO, P. LALOUSIS, R. CASTILLO, X. YANG, B. MALEKYNIA, AND M. GHORANNEVISS 353 Review about acceleration of plasma by nonlinear forces from picosecond laser pulses and block generated fusion flame in uncompressed fuel
- HONG QIN, RONALD C. DAVIDSON, AND B. GRANT LOGAN 365 Centroid and envelope dynamics of charged particle beams in an oscillating wobbler and external focusing lattice for heavy ion fusion applications
- ALIREZA PAKNEZHAD AND DAVOUD DORRANIAN 373 Nonlinear backward Raman scattering in the short laser pulse interaction with a cold underdense transversely magnetized plasma
- 381 ERRATUM

Cambridge Journals Online

For further information about this journal please go to the journal website at:
journals.cambridge.org/lpb

CAMBRIDGE
UNIVERSITY PRESS