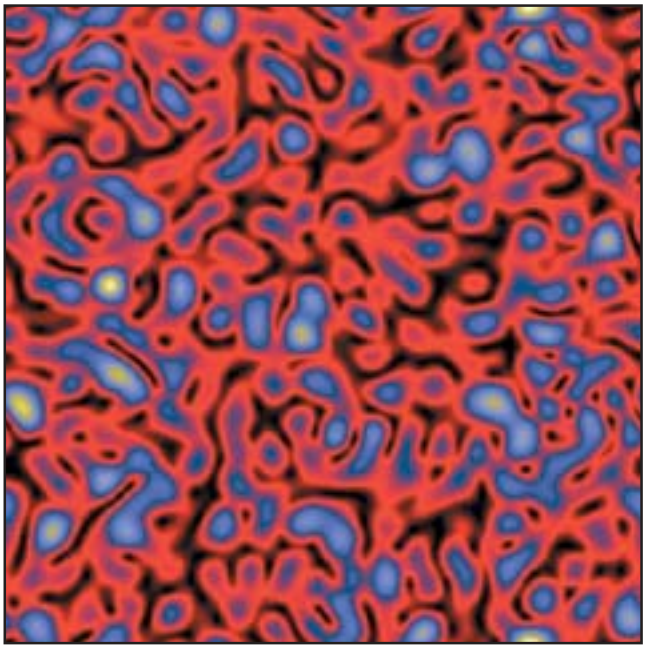
About the Cover:

The cover photo shows an image of the laser electric-field intensity taken from the parallel, three-dimensional, laser–plasma interaction (LPI) code pF3D. The pF3D code was developed by Lawrence Livermore National Laboratory (LLNL) primarily for modeling LPI in hohlraum plasmas. The article entitled "Modeling Laser–Plasma Interaction Physics Under Direct-Drive Inertial Confinement Fusion Conditions" (p. 93) describes how scientists at LLE, including Scientist Jason Myatt (shown in the inset), are adapting pF3D for use in direct-drive conditions.



The electric-field intensity shown in the figure displays the characteristic speckle pattern in the transverse plane to the laser axis as a result of beam smoothing using distributed phase plates (DPP's). In the statistical distribution of electric-field maxima, there are individual maxima (or "hot spots") that can exceed the average incident intensity by several times. Laser-driven parametric scattering instabilities such as stimulated brillouin scattering (SBS) or decay instabilities like the two-plasmon decay (TPD) are preferentially driven in these hot spots due to the elevated light intensities.

The work described in this volume includes current research at the Laboratory for Laser Energetics, which is supported by New York State Energy Research and Development Authority, the University of Rochester, the U.S. Department of Energy Office of Inertial Confinement Fusion under Cooperative Agreement No. DE-FC03-92SF19460, and other agencies.

Printed in the United States of America
Available from
National Technical Information Services
U.S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161

Price codes: Printed Copy A04
Microfiche A01

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Worldwide-Web Home Page: http://www.lle.rochester.edu/