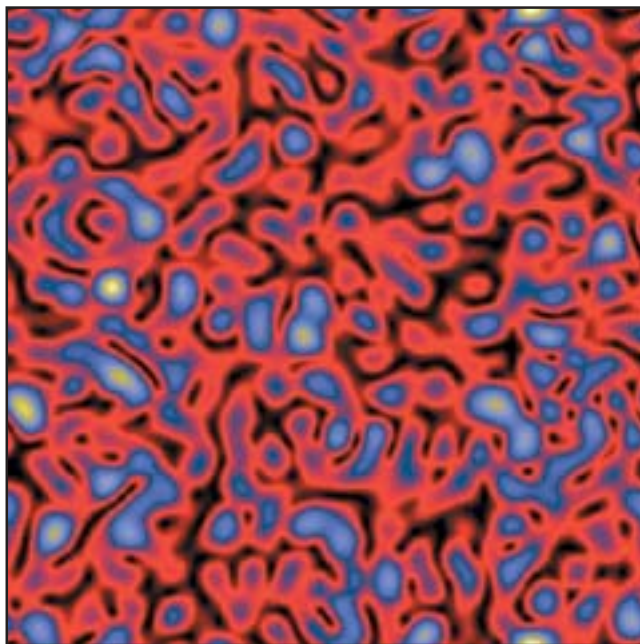


About the Cover:

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.

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For questions or comments, contact Timothy J. B. Collins, *Editor*, Laboratory for Laser Energetics, 250 East River Road, Rochester, NY 14623-1299, (585) 275-8245.

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