
Publications and Conference Presentations

Publications

- R. Arpaia, M. Ejrnaes, L. Parlato, F. Tafuri, R. Cristiano, D. Golubev, R. Sobolewski, T. Bauch, F. Lombardi, and G. P. Pepe, “High-Temperature Superconducting Nanowires for Photon Detection,” *Physica C* **509**, 16 (2015).
- R. L. Berger, L. J. Suter, L. Divol, R. A. London, T. Chapman, D. H. Froula, N. B. Meezan, P. Neumayer, and S. H. Glenzer, “Beyond the Gain Exponent: Effect of Damping, Scale Length, and Speckle Length on Stimulated Scatter,” *Phys. Rev. E* **91**, 031103(R) (2015).
- A. Casner, L. Masse, B. Delorme, D. Martinez, G. Huser, D. Galmiche, S. Liberatore, I. Igumenshchev, M. Olazabal-Loumé, Ph. Nicolai, J. Breil, D. T. Michel, D. Froula, W. Seka, G. Riazuelo, S. Fujioka, A. Sunahara, M. Grech, C. Chicanne, M. Theobald, N. Borisenko, A. Orekhov, V. T. Tikhonchuk, B. Remington, V. N. Goncharov, and V. A. Smalyuk, “Progress in Indirect and Direct-Drive Planar Experiments on Hydrodynamic Instabilities at the Ablation Front,” *Phys. Plasmas*, **21**, 122702 (2014).
- R. Epstein, V. N. Goncharov, F. J. Marshall, R. Betti, R. Nora, A. R. Christopherson, I. E. Golovkin, and J. J. MacFarlane, “X-Ray Continuum as a Measure of Pressure and Fuel–Shell Mix in Compressed Isobaric Hydrogen Implosion Cores,” *Phys. Plasmas* **22**, 022707 (2015).
- G. Fiksel, A. Agliata, D. Barnak, G. Brent, P.-Y. Chang, L. Folsbee, G. Gates, D. Hasset, D. Lonobile, J. Magoon, D. Mastrosimone, M. J. Shoup III, and R. Betti, “Note: Experimental Platform for Magnetized High-Energy-Density Plasma Studies at the Omega Laser Facility,” *Rev. Sci. Instrum.* **86**, 016105 (2015).
- R. K. Follett, D. H. Edgell, R. J. Henchen, S. X. Hu, J. Katz, D. T. Michel, J. F. Myatt, J. Shaw, and D. H. Froula, “Direct Observation of the Two-Plasmon-Decay Common Plasma Wave Using Ultraviolet Thomson Scattering,” *Phys. Rev. E* **91**, 031104(R) (2015).
- C. M. Huntington, F. Fiuza, J. S. Ross, A. B. Zylstra, R. P. Drake, D. H. Froula, G. Gregori, N. L. Kugland, C. C. Kuranz, M. C. Levy, C. K. Li, J. Meinecke, T. Morita, R. Petrasso, C. Plechaty, B. A. Remington, D. D. Ryutov, Y. Sakawa, A. Spitkovsky, H. Takabe, and H.-S. Park, “Observation of Magnetic Field Generation via the Weibel Instability in Interpenetrating Plasma Flows,” *Nat. Phys* **11**, 173 (2015).
- M. Lafon, R. Betti, K. S. Anderson, T. J. B. Collins, R. Epstein, P. W. McKenty, J. F. Myatt, A. Shvydky, and S. Skupsky, “Direct-Drive–Ignition Designs with Mid-Z Ablators,” *Phys. Plasmas* **22**, 032703 (2015).
- K. Mehrotra, J. B. Oliver, and J. C. Lambropoulos, “Nano-Indentation of Single-Layer Optical Oxide Thin Films Grown by Electron-Beam Deposition,” *Appl. Opt.* **54**, 2435 (2015).
- D. T. Michel, A. K. Davis, V. N. Goncharov, T. C. Sangster, S. X. Hu, I. V. Igumenshchev, D. D. Meyerhofer, W. Seka, and D. H. Froula, “Measurements of the Conduction-Zone Length and Mass Ablation Rate in Cryogenic Direct-Drive Implosions on OMEGA,” *Phys. Rev. Lett.* **114**, 155002 (2015).
- D. S. Montgomery, B. J. Albright, D. H. Barnak, P. Y. Chang, J. R. Davies, G. Fiksel, D. H. Froula, J. L. Kline, M. J. MacDonald, A. B. Sefkow, L. Yin, and R. Betti, “Use of External Magnetic Fields in Hohlraum Plasmas to Improve Laser-Coupling,” *Phys. Plasmas* **22**, 010703 (2015).
- R. Nora, W. Theobald, R. Betti, F. J. Marshall, D. T. Michel, W. Seka, B. Yaakobi, M. Lafon, C. Stoeckl, J. Delettrez, A. A. Solodov, A. Casner, C. Reverdin, X. Ribeyre, A. Vallet, J. Peebles, F. N. Beg, and M. S. Wei, “Gigabar Spherical Shock Generation on the OMEGA Laser,” *Phys. Rev. Lett.* **114**, 045001 (2015).
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F. H. Séguin, R. D. Petrasso, P. Amendt, C. Bellei, S. Wilks, J. Delettrez, V. Yu. Glebov, C. Stoeckl, T. C. Sangster, D. D. Meyerhofer, and A. Nikroo, “Ion Thermal Decoupling and Species Separation in Shock-Driven Implosions,” *Phys. Rev. Lett.* **114**, 025001 (2015).

M. J. Rosenberg, C. K. Li, W. Fox, I. Igumenshchev, F. H. Séguin, R. P. J. Town, J. A. Frenje, C. Stoeckl, V. Glebov, and R. D. Petrasso, “A Laboratory Study of Asymmetric Magnetic Reconnection in Strongly Driven Plasmas,” *Nat. Commun.* **6**, 6190 (2015).

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A. B. Zylstra, J. A. Frenje, F. H. Séguin, D. G. Hicks, E. L. Dewald, H. F. Robey, J. R. Rygg, N. B. Meezan, M. J. Rosenberg, H. G. Rinderknecht, S. Friedrich, R. Bionta, R. Olson, J. Atherton, M. Barrios, P. Bell, R. Benedetti, L. Berzak Hopkins, R. Betti, D. Bradley, D. Callahan, D. Casey, G. Collins, S. Dixit, T. Döppner, D. Edgell, M. J. Edwards, M. Gatun Johnson, S. Glenn, S. Glenzer, G. Grim, S. Hatchett, O. Jones, S. Khan, J. Kilkenny, J. Kline, J. Knauer, A. Kritcher, G. Kyrala, O. Landen, S. LePape, C. K. Li, J. Lindl, T. Ma, A. Mackinnon, A. Macphee, M. J.-E. Manuel, D. Meyerhofer, J. Moody, E. Moses, S. R. Nagel, A. Nikroo, A. Pak, T. Parham, R. D. Petrasso, R. Prasad, J. Ralph, M. Rosen, J. S. Ross, T. C. Sangster, S. Sepke, N. Sinenian, H. W. Sio, B. Spears, P. Springer, R. Tommasini, R. Town, S. Weber, D. Wilson, and R. Zacharias, “The Effect of Shock Dynamics on Compressibility of Ignition-Scale National Ignition Facility Implosions,” *Phys. Plasmas* **21**, 112701 (2014).

Forthcoming Publications

R. Epstein, S. P. Regan, B. A. Hammel, L. J. Suter, H. A. Scott, M. A. Barrios, D. K. Bradley, D. A. Callahan, C. Cerjan, G. W. Collins, S. N. Dixit, T. Döppner, M. J. Edwards, D. R. Farley, K. B. Fournier, S. Glenn, S. H. Glenzer, I. E. Golovkin, A. Hamza, D. G. Hicks, N. Izumi, O. S. Jones, M. H. Key, J. D. Kilkenny, J. L. Kline, G. A. Kyrala, O. L. Landen, T. Ma, J. J. MacFarlane, A. J. Mackinnon, R. C. Mancini, R. L. McCrory, D. D. Meyerhofer, N. B. Meezan, A. Nikroo, H.-S. Park, P. K. Patel, J. E. Ralph, B. A. Remington, T. C. Sangster, V. A. Smalyuk, P. T. Springer, R. P. J. Town, and J. L. Tucker, “Applications and Results of X-Ray Spectroscopy in Implosion Experiments at the National Ignition Facility,” to be published in *Proceedings of Atomic Processes in Plasmas* (invited).

H. Habara, S. Ivancic, T. Iwawaki, Y. Uematsu, K. A. Tanaka, K. S. Anderson, D. Haberberger, C. Stoeckl, and W. Theobald, “Efficient Propagation of an Ultra-Intense Laser Beam in Dense Plasma,” to be published in *Plasma Physics and Controlled Fusion*.

M. Hohenberger, P. B. Radha, J. F. Myatt, S. LePape, J. A. Marozas, F. J. Marshall, D. T. Michel, S. P. Regan, W. Seka, A. Shvydky, T. C. Sangster, J. W. Bates, R. Betti, T. R. Boehly, M. J. Bonino, D. T. Casey, T. J. B. Collins, R. S. Craxton, J. A. Delettrez, D. H. Edgell, R. Epstein, G. Fiksel,

P. Fitzsimmons, J. A. Frenje, D. H. Froula, V. N. Goncharov, D. R. Harding, D. H. Kalantar, M. Karasik, T. J. Kessler, J. D. Kilkenny, J. P. Knauer, C. Kurz, M. Lafon, K. N. LaFortune, B. J. MacGowan, A. J. Mackinnon, A. G. MacPhee, R. L. McCrory, P. W. McKenty, J. F. Meeker, D. D. Meyerhofer, S. R. Nagel, A. Nikroo, S. Obenschain, R. D. Petrasso, J. E. Ralph, H. G. Rinderknecht, M. J. Rosenberg, A. J. Schmitt, R. J. Wallace, J. Weaver, C. Widmayer, S. Skupsky, A. A. Solodov, C. Stoeckl, B. Yaakobi, and J. D. Zuegel, “Polar-Direct-Drive Experiments at the National Ignition Facility,” to be published in *Physics of Plasmas* (invited).

S. X. Hu, V. N. Goncharov, T. R. Boehly, R. L. McCrory, S. Skupsky, L. A. Collins, J. D. Kress, and B. Militzer, “Impact of First-Principles Properties of Deuterium–Tritium on Inertial Confinement Fusion Target Designs,” to be published in *Physics of Plasmas* (invited).

S. Ivancic, D. Haberberger, H. Habara, T. Iwawaki, K. S. Anderson, R. S. Craxton, D. H. Froula, D. D. Meyerhofer, C. Stoeckl, K. Tanaka, and W. Theobald, “Channeling Multikilojoule High-Intensity Laser Beams in an Inhomogeneous Plasma,” to be published in *Physical Review E*.

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P. M. Nilson, L. Gao, I. V. Igumenshev, G. Fiksel, R. Yan, J. R. Davies, D. Martinez, V. A. Smalyuk, M. G. Haines, E. G. Blackman, D. H. Froula, R. Betti, and D. D. Meyerhofer, “Magnetic-Field Generation by the Ablative Nonlinear Rayleigh–Taylor Instability,” to be published in the *Journal of Plasma Physics*.

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J. A. Marozas, F. J. Marshall, R. L. McCrory, P. W. McKenty, D. D. Meyerhofer, D. T. Michel, S. X. Hu, W. Seka, A. Shvydky, S. Skupsky, J. A. Frenje, M. Gatu-Johnson, R. D. Petrasso, T. Ma, S. Le Pape, and A. J. Mackinnon, “Direct-Drive-Implosion Physics: Results from OMEGA and the National Ignition Facility,” to be published in the *Journal of Physics: Conference Series*.

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Conference Presentations

T. Z. Kosc, J. H. Kelly, E. M. Hill, C. Dorrer, W. Donaldson, and L. J. Waxer, “The Multiple-Pulse Driver Line on the OMEGA Laser,” *Photonics West-LASE*, San Francisco, CA, 7–12 February 2015.

A. K. Davis, D. T. Michel, I. V. Igumenshev, R. S. Craxton, R. Epstein, V. N. Goncharov, M. Hohenberger, S. X. Hu, M. Lafon, D. D. Meyerhofer, P. B. Radha, T. C. Sangster, and D. H. Froula, “Polar Direct-Drive Mass-Ablation-Rate Measure-

ments on OMEGA and the NIF,” *NIF and Jupiter Laser Facility User Group Meeting*, Livermore, CA, 8–11 February 2015.

Y. Akbas, L. Q. Zhang, Y. Alimi, A. M. Song, I. Iñiguez-de-la-Torre, J. Mateos, T. González, G. Wicks, and R. Sobolewski, “Optically-Active Semiconducting Asymmetric Nano-Channel Diodes,” *5th OASIS Int’l Conf. & Exhibition on Optics and Electro-Optics*, Tel Aviv, Israel, 3–4 March 2015.