
Publications and Conference Presentations

Publications

- D. Batani, S. Baton, A. Casner, S. Depierreux, M. Hohenberger, O. Klimo, M. Koenig, C. Labaune, X. Ribeyre, C. Rousseaux, G. Schurtz, W. Theobald, and V. T. Tikhonchuk, "Physics Issues for Shock Ignition," *Nucl. Fusion* **54**, 054009 (2014).
- H.-M. P. Chen, J. J. Ou, and S. H. Chen, "Glassy Liquid Crystals as Self-Organized Films for Robust Optoelectronic Devices," in *Nanoscience with Liquid Crystals: From Self-Organized Nanostructures to Applications*, edited by Q. Li, Springer Series in NanoScience and Technology (Springer, Switzerland, 2014), Chap. 6, pp. 179–208.
- V. N. Goncharov, T. C. Sangster, R. Betti, T. R. Boehly, M. J. Bonino, T. J. B. Collins, R. S. Craxton, J. A. Delettrez, D. H. Edgell, R. Epstein, R. K. Follett, C. J. Forrest, D. H. Froula, V. Yu. Glebov, D. R. Harding, R. J. Henchen, S. X. Hu, I. V. Igumenshchev, R. Janezic, J. H. Kelly, T. J. Kessler, T. Z. Kosc, S. J. Loucks, J. A. Marozas, F. J. Marshall, A. V. Maximov, R. L. McCrory, P. W. McKenty, D. D. Meyerhofer, D. T. Michel, J. F. Myatt, R. Nora, P. B. Radha, S. P. Regan, W. Seka, W. T. Shmayda, R. W. Short, A. Shvydky, S. Skupsky, C. Stoeckl, B. Yaakobi, J. A. Frenje, M. Gatu-Johnson, R. D. Petrasso, and D. T. Casey, "Improving the Hot-Spot Pressure and Demonstrating Ignition Hydrodynamic Equivalence in Cryogenic Deuterium–Tritium Implosions on OMEGA," *Phys. Plasmas* **21**, 056315 (2014) (invited).
- D. Haberberger, S. Ivancic, S. X. Hu, R. Boni, M. Barczys, R. S. Craxton, and D. H. Froula, "Measurements of Electron Density Profiles Using an Angular Filter Refractometer," *Phys. Plasmas* **21**, 056304 (2014) (invited).
- J. D. Hager, T. J. B. Collins, V. A. Smalyuk, J. P. Knauer, D. D. Meyerhofer, and T. C. Sangster, "Study of Rayleigh–Taylor Growth in Laser Irradiated Planar SiO₂ Targets at Ignition-Relevant Conditions," *Phys. Plasmas* **20**, 072707 (2013).
- D. R. Harding, H. Goodrich, A. Caveglia, and M. Anthamatten, "Effect of Temperature and Volume on the Tensile and Adhesive Properties of Photocurable Resins," *J. Polym. Sci. B, Polym. Phys.* **52**, 936 (2014).
- S. X. Hu, T. R. Boehly, and L. A. Collins, "Properties of Warm Dense Polystyrene Plasmas Along the Principal Hugoniot," *Phys. Rev. E* **89**, 063104 (2014).
- S. X. Hu, L. A. Collins, T. R. Boehly, J. D. Kress, V. N. Goncharov, and S. Skupsky, "First-Principles Thermal Conductivity of Warm-Dense Deuterium Plasmas for Inertial Confinement Fusion Applications," *Phys. Rev. E* **89**, 043105 (2014).
- I. V. Igumenshchev, A. B. Zylstra, C. K. Li, P. M. Nilson, V. N. Goncharov, and R. D. Petrasso, "Self-Generated Magnetic Fields in Direct-Drive Implosion Experiments," *Phys. Plasmas* **21**, 062707 (2014).
- V. V. Ivanov, A. A. Anderson, D. Papp, B. R. Talbot, J. P. Chittenden, N. Niasse, and I. A. Begishev, "UV Laser-Probing Diagnostics for the Dense Z Pinch," *IEEE Trans. Plasma Sci.* **42**, 1153 (2014).
- J. F. Myatt, J. Zhang, R. W. Short, A. V. Maximov, W. Seka, D. H. Froula, D. H. Edgell, D. T. Michel, I. V. Igumenshchev, D. E. Hinkel, P. Michel, and J. D. Moody, "Multiple-Beam Laser–Plasma Interactions in Inertial Confinement Fusion," *Phys. Plasmas* **21**, 055501 (2014) (invited).
- T. Nagayama, R. C. Mancini, R. Florido, D. Mayes, R. Tommasini, J. A. Koch, J. A. Delettrez, S. P. Regan, and V. A. Smalyuk, "Direct Asymmetry Measurement of Temperature and Density Spatial Distributions in Inertial Confinement Fusion Plasmas from Pinhole Space-Resolved Spectra," *Phys. Plasmas* **21**, 050702 (2014).
- R. Nora, R. Betti, K. S. Anderson, A. Shvydky, A. Bose, K. M. Woo, A. R. Christopherson, J. A. Marozas, T. J. B. Collins, P. B. Radha, S. X. Hu, R. Epstein, F. J. Marshall, R. L. McCrory, T. C. Sangster, and D. D. Meyerhofer, "Theory of Hydro-Equivalent

Ignition for Inertial Fusion and Its Applications to OMEGA and the National Ignition Facility,” *Phys. Plasmas* **21**, 056316 (2014) (invited).

S. Papernov, A. A. Kozlov, J. B. Oliver, T. J. Kessler, A. Shvydkiy, and A. B. Marozas, “Near-Ultraviolet Absorption-Annealing in Hafnium Oxide Thin Films Subjected to Continuous-Wave Laser Radiation,” *Opt. Eng.* **53**, 122504 (2014).

P. B. Radha, M. Hohenberger, F. J. Marshall, R. S. Craxton, D. H. Edgell, D. H. Froula, V. N. Goncharov, J. A. Marozas, R. L. McCrory, P. W. McKenty, D. D. Meyerhofer, D. T. Michel, J. F. Myatt, T. C. Sangster, W. Seka, and S. Skupsky, “Polar-Drive Implosions—Results from OMEGA and the National Ignition Facility,” *Stockpile Stewardship Quarterly* **4**, 10, NNSA Office of Research, Development, Test, and Evaluation, Washington, D.C., DOE/NA-0023 (2014).

B. Rice, J. Quinzi, L. Lund, J. Ulreich, and M. Shoup, “Measurement of Young’s Modulus and Damping of Fibers at Cryogenic Temperatures,” *Cryogenics* **63**, 43 (2014).

H. G. Rinderknecht, H. Sio, C. K. Li, N. Hoffman, A. B. Zylstra, M. J. Rosenberg, J. A. Frenje, M. Gatu Johnson, F. H. Séguin, R. D. Petrasso, R. Betti, V. Yu. Glebov, D. D. Meyerhofer, T. C. Sangster, W. Seka, C. Stoeckl, G. Kagan, K. Molvig, C. Bellei, P. Amendt, O. Landen, J. R. Rygg, V. A. Smalyuk, S. Wilks, A. Greenwood, and A. Nikroo, “Kinetic Mix Mechanisms in Shock-Driven Inertial Confinement Fusion Implosions,” *Phys. Plasmas* **21**, 056311 (2014).

H. G. Rinderknecht, H. Sio, C. K. Li, A. B. Zylstra, M. J. Rosenberg, P. Amendt, J. Delettrez, C. Bellei, J. A. Frenje, M. Gatu Johnson, F. H. Séguin, R. D. Petrasso, R. Betti, V. Yu. Glebov, D. D. Meyerhofer, T. C. Sangster, C. Stoeckl, O. Landen, V. A. Smalyuk, S. Wilks, A. Greenwood, and A. Nikroo, “First Observations of Nonhydrodynamic Mix at the Fuel-Shell Interface in Shock-Driven Inertial Confinement Implosions,” *Phys. Rev. Lett.* **112**, 135001 (2014).

M. J. Rosenberg, H. G. Rinderknecht, N. M. Hoffman, P. A. Amendt, S. Atzeni, A. B. Zylstra, C. K. Li, F. H. Séguin, H. Sio, M. Gatu Johnson, J. A. Frenje, R. D. Petrasso, V. Yu. Glebov, C. Stoeckl, W. Seka, F. J. Marshall, J. A. Delettrez, T. C. Sangster, R. Betti, V. N. Goncharov, D. D. Meyerhofer, S. Skupsky, C. Bellei, J. Pino, S. C. Wilks, G. Kagan, K. Molvig, and A. Nikroo, “Exploration of the Transition from the Hydrodynamiclike to the Strongly Kinetic Regime in Shock-Driven Implosions,” *Phys. Rev. Lett.* **112**, 185001 (2014).

M. J. Rosenberg, F. H. Séguin, C. J. Waugh, H. G. Rinderknecht, D. Orozco, J. A. Frenje, M. Gatu Johnson, H. Sio, A. B. Zylstra, N. Sinenian, C. K. Li, R. D. Petrasso, V. Yu. Glebov, C. Stoeckl, M. Hohenberger, T. C. Sangster, S. LePape, A. J. Mackinnon, R. M. Bionta, O. L. Landen, R. A. Zacharias, Y. Kim, H. W. Herrmann, and J. D. Kilkenny, “Empirical Assessment of the Detection Efficiency of CR-39 at High Proton Fluence and a Compact, Proton Detector for High-Fluence Applications,” *Rev. Sci. Instrum.* **85**, 043302 (2014).

W. Seka, J. F. Myatt, R. W. Short, D. H. Froula, J. Katz, V. N. Goncharov, and I. V. Igumenshev, “Nonuniformly Driven Two-Plasmon-Decay Instability in Direct-Drive Implosions,” *Phys. Rev. Lett.* **112**, 145001 (2014).

V. A. Smalyuk, M. Barrios, J. A. Caggiano, D. T. Casey, C. J. Cerjan, D. S. Clark, M. J. Edwards, J. A. Frenje, M. Gatu-Johnson, V. Y. Glebov, G. Grim, S. W. Haan, B. A. Hammel, A. Hamza, D. E. Hoover, W. W. Hsing, O. Hurricane, J. D. Kilkenny, J. L. Kline, J. P. Knauer, J. Kroll, O. L. Landen, J. D. Lindl, T. Ma, J. M. McNaney, M. Mintz, A. Moore, A. Nikroo, T. Parham, J. L. Peterson, R. Petrasso, L. Pickworth, J. E. Pino, K. Raman, S. P. Regan, B. A. Remington, H. F. Robey, D. P. Rowley, D. B. Sayre, R. E. Tipton, S. V. Weber, K. Widmann, D. C. Wilson, and C. B. Yeaman, “Hydrodynamic Instability Growth and Mix Experiments at the National Ignition Facility,” *Phys. Plasmas* **21**, 056301 (2014).

H. X. Vu, D. F. DuBois, D. A. Russell, J. F. Myatt, and J. Zhang, “Nonlinear Development of the Two-Plasmon Decay Instability in Three Dimensions,” *Phys. Plasmas* **21**, 042705 (2014).

R. Yan, J. Li, and C. Ren, “Intermittent Laser-Plasma Interactions and Hot Electron Generation in Shock Ignition,” *Phys. Plasmas* **21**, 062705 (2014).

J. Zhang, M. Mikulics, R. Adam, D. Grützmacher, and R. Sobolewski, “Generation of THz Transients by Photoexcited Single-Crystal GaAs Meso-Structures,” *Appl. Phys. B.* **113**, 339 (2013).

A. B. Zylstra, M. Gatu Johnson, J. A. Frenje, F. H. Séguin, H. G. Rinderknecht, M. J. Rosenberg, H. W. Sio, C. K. Li, R. D. Petrasso, M. McCluskey, D. Mastro Simone, V. Yu. Glebov, C. Forrest, C. Stoeckl, and T. C. Sangster, “A Compact Neutron Spectrometer for Characterizing Inertial Confinement Fusion Implosions at OMEGA and the NIF,” *Rev. Sci. Instrum.* **85**, 063502 (2014).

Forthcoming Publications

S.-W. Bahk, I. A. Begishev, and J. D. Zuegel, “Precompensation of Gain Nonuniformity in a Nd:glass Amplifier Using a Programmable Beam-Shaping System,” to be published in *Optics Communications*.

C. Dorrer, “Analysis of Nonlinear Optical Propagation in a Longitudinal Deuterated Potassium Dihydrogen Phosphate Pockels Cell,” to be published in the *Journal of the Optical Society of America B*.

C. Dorrer, R. G. Roides, J. Bromage, and J. D. Zuegel, “Self-Phase Modulation Compensation in a Regenerative Amplifier Using Cascaded Second-Order Nonlinearities,” to be published in *Optics Letters*.

D. Eimerl, E. M. Campbell, W. F. Krupke, J. Zweiback, W. L. Kruer, J. Marozas, J. Zuegel, J. Myatt, J. Kelly, D. Froula, and R. L. McCrory, “StarDriver: A Flexible Laser Driver for Inertial Confinement Fusion and High Energy Density Physics,” to be published in the *Journal of Fusion Energy*.

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. Doepfner, 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 on the National Ignition Facility,” to be published in *Proceedings of Atomic Processes in Plasmas* (invited).

H. P. H. Liddell, J. C. Lambropoulos, and S. D. Jacobs, “Thermomechanical Model to Assess Stresses Developed During Elevated-Temperature Cleaning of Coated Optics,” to be published in *Applied Optics*.

F. Philippe, V. Tassin, S. Despierreux, P. Gauthier, P. E. Masson-Laborde, M. C. Monteil, P. Seytor, B. Villette, B. Lasinski, H. S. Park, J. S. Ross, P. Amendt, T. Döppner, D. E. Hinkel, R. Wallace, E. Williams, P. Michel, J. Frenje, M. Gatu-Johnson, C. K. Li, R. Petrasso, V. Glebov, C. Sorce, C. Stoeckl, A. Nikroo, and E. Giraldez, “Demonstrated High Performance of Gas-Filled Rugby-Shaped Hohlräume on Omega,” to be published in *Physics of Plasmas*.

H. G. Rinderknecht, H. Sio, J. A. Frenje, J. Magoon, A. Agliata, M. Shoup, S. Ayers, C. G. Bailey, M. Gatu Johnson, A. B. Zylstra, N. Sinenian, M. J. Rosenberg, C. K. Li, F. H. Séguin, R. D. Petrasso, J. R. Rygg, J. R. Kimbrough, A. Mackinnon, P. Bell, R. Bionta, T. Clancy, R. Zacharias, A. House, T. Döppner, H. S. Park, S. LePape, O. Landen, N. Meezan, H. Robey, V. Yu. Glebov, M. Hohenberger, C. Stoeckl, T. C. Sangster, C. Li, J. Parat, R. Olson, J. Kline, and J. Kilkenny, “A Magnetic Particle Time-of-Flight (MagPTOF) Diagnostic for Measurements of Shock- and Compression-Bang Time at the NIF,” to be published in *Review of Scientific Instruments* (invited).

M. Storm, B. Eichman, C. Orban, S. Jiang, G. Fiksel, C. Stoeckl, G. Dyer, T. Ditmire, R. Stephens, W. Theobald, J. A. Delettrez, R. R. Freeman, and K. Akli, “ K_{α} X-Ray Imaging of Laser-Irradiated, Limited-Mass Zirconium Foils,” to be published in *Physics of Plasmas*.

J. Zhang, J. F. Myatt, A. V. Maximov, R. W. Short, H. H. Vu, D. F. DuBois, and D. A. Russell, “Multibeam Two-Plasmon Decay: Linear Threshold to Nonlinear Saturation in Three Dimensions,” to be published in *Physical Review Letters*.

Conference Presentations

T. Jacobs, M. Mayton, Z. Hobbs, and S. D. Jacobs, “Cerium Oxide Polishing Slurry Reclamation: Process Improvements at Flint Creek Resources and Sydor Optics,” CEIS 14th Annual University Technology Showcase, Rochester, NY, 10 April 2014.

W. T. Shmayda, M. D. Wittman, J. Reid, N. Redden, R. Early, J. Magoon, K. Heung, S. Xiao, T. Sessions, and S. Redd, “Initial Operation of the μ TCAP Using H₂ and D₂,” Tritium Focus Group, Aiken, SC, 22–24 April 2014.

The following presentations were made at the Sixth Omega Laser Facility Users Group Workshop, Rochester, NY, 23–25 April 2014:

W. J. Armstrong, J. Puth, and R. Rombaut, “Target Diagnostic Timing Manager (TDTM).”

A. Bose, K. Woo, R. Nora, and R. Betti, “Hydrodynamic Scaling of the Deceleration Phase from OMEGA to NIF Implosions.”

A. Christopherson, R. Betti, R. Epstein, F. J. Marshall, R. Nora, P. B. Radha, C. Stoeckl, J. A. Delettrez, and C. J. Forrest, “Comprehensive Analysis of a High Adiabatic Implosion on OMEGA.”

V. N. Goncharov, T. C. Sangster, R. Betti, T. R. Boehly, T. J. B. Collins, R. S. Craxton, J. A. Delettrez, D. H. Edgell, R. Epstein, C. J. Forrest, D. H. Froula, V. Yu. Glebov, D. R. Harding, S. X. Hu, I. V. Igumenshchev, R. Janezic, J. H. Kelly, T. J. Kessler, T. Z. Kosc, S. J. Loucks, J. A. Marozas, F. J. Marshall, A. V. Maximov, R. L. McCrory, P. W. McKenty, D. D. Meyerhofer, D. T. Michel, J. F. Myatt, R. Nora, P. B. Radha, S. P. Regan, W. Seka, W. T. Shmayda, R. W. Short, A. Shvydky, S. Skupsky, C. Sorce, C. Stoeckl, B. Yaakobi, J. A. Frenje, M. Gatu Johnson, R. D. Petrasso, and D. T. Casey, “Demonstrating Ignition Hydrodynamic Equivalence in Cryogenic DT Implosions on OMEGA.”

S. Goodman, W. T. Shmayda, and N. Redden, “Evaluation of a Compact Cryotrap.”

M. C. Gregor, R. Boni, A. Sorce, C. A. McCoy, M. Millot, J. H. Eggert, P. M. Celliers, T. R. Boehly, and D. D. Meyerhofer, “The Absolute Calibration of the Streaked Optical Pyrometer at the Omega Laser Facility.”

D. Haberberger, R. Boni, M. Barczys, J. Brown, R. Huff, S. X. Hu, S. Ivancic, R. G. Roides, M. Bedzyk, R. S. Craxton, F. Ehrne, C. Stoeckl, E. Hill, R. K. Jungquist, J. Magoon, D. Mastrosimone, J. Puth, W. Seka, M. J. Shoup III, W. Theobald, D. Weiner, J. D. Zuegel, D. H. Froula, J. Moody, D. Turnbull, B. Pollock, S. Ross, and A. Harvey-Thompson, “Optical Probing Measurements on OMEGA EP.”

R. A. Hamilton, W. T. Shmayda, and N. Redden, “X-Ray Emission from DT-Filled Targets.”

E. Hill, G. Balonek, R. Cuffney, J. H. Kelly, and T. Z. Kosc, “OMEGA SSD Arbitrary Waveform Generation Installation and Activation.”

E. Hwang, R. Boni, and W. R. Donaldson, “Testing of the OMEGA Beam-Timing System.”

R. W. Kidder and C. Kingsley, “LLE Resources are Established to Provide Access to Information for External Users.”

Y. Kong, R. S. Craxton, P. W. McKenty, and C.-K. Li, “Beam-Pointing Optimization for Proton Backlighting at the National Ignition Facility.”

B. E. Kruschwitz, A. Kalb, J. Kwiatkowski, and T. Nguyen, “Co-Propagation of Short-Pulse Beams on OMEGA EP.”

J. Kwiatkowski, E. Hill, B. Ehrich, M. Heimbueger, and F. J. Marshall, “OMEGA EP Pointing, Focusing, and Timing.”

D. Mastrosimone, G. Fiksel, J. Magoon, A. Agliata, P.-Y. Chang, and D. Barnak, “Fielding MIFEDS on OMEGA.”

S. F. B. Morse, “Omega Facility Update: OLUG Recommendations and Items of General Interest.”

G. Pien, W. J. Armstrong, and M. Labuzeta, “Diagnostic Effectiveness and Availability at the Omega Laser Facility.”

C. Sorce, A. Sorce, J. Katz, R. E. Bahr, and P. M. Nilson, "Omega Laser Facility Diagnostic Highlights."

M. D. Wittman, N. Redden, J. Reid, and W. T. Shmayda, "Initial Operation of the Isotope Separation System Using Protium and Deuterium."

The following presentations were made at the Cryo Workshop, Rochester, NY, 29–30 April 2014:

D. H. Froula, A. K. Davis, D. H. Edgell, G. Fiksel, R. K. Follett, V. N. Goncharov, R. J. Henchen, H. Hu, S. X. Hu, I. V. Igumenshchev, T. J. Kessler, D. D. Meyerhofer, D. T. Michel, J. F. Myatt, P. B. Radha, T. C. Sangster, C. Stoeckl, and B. Yaakobi, "Mitigation of Cross-Beam Energy Transfer in Direct-Drive Implosions on OMEGA."

V. N. Goncharov, T. C. Sangster, R. Betti, T. R. Boehly, T. J. B. Collins, R. S. Craxton, J. A. Delettrez, D. H. Edgell, R. Epstein, C. J. Forrest, D. H. Froula, V. Yu. Glebov, D. R. Harding, S. X. Hu, I. V. Igumenshchev, R. Janezic, J. H. Kelly, T. J. Kessler, T. Z. Kosc, S. J. Loucks, J. A. Marozas, F. J. Marshall, A. V. Maximov, R. L. McCrory, P. W. McKenty, D. D. Meyerhofer, D. T. Michel, J. F. Myatt, R. Nora, P. B. Radha, S. P. Regan, W. Seka, W. T. Shmayda, R. W. Short, A. Shvydky, S. Skupsky, C. Sorce, C. Stoeckl, B. Yaakobi, J. A. Frenje, M. Gatu Johnson, R. D. Petrasso, and D. T. Casey, "Demonstrating Ignition Hydrodynamic Equivalence in Cryogenic DT Implosions on OMEGA."

R. L. McCrory, "Direct-Drive Cryogenic Implosion Workshop: Goals and Charge."

P. W. McKenty, "Hydrodynamic Modeling in 2-D and 3-D: Plans and Challenges."

J. F. Myatt, D. F. DuBois, H. X. Vu, and D. A. Russell, "Hot-Electron Production and Preheat at the Omega Laser Facility."

T. C. Sangster, V. N. Goncharov, R. Betti, T. R. Boehly, T. J. B. Collins, R. S. Craxton, J. A. Delettrez, D. H. Edgell, R. Epstein, C. J. Forrest, D. H. Froula, V. Yu. Glebov, D. R. Harding, M. Hohenberger, S. X. Hu, I. V. Igumenshchev, R. T. Janezic, J. H. Kelly, T. J. Kessler, J. P. Knauer, T. Z. Kosc, S. J. Loucks, J. A. Marozas, F. J. Marshall, A. V. Maximov, R. L. McCrory,

P. W. McKenty, D. D. Meyerhofer, D. T. Michel, J. F. Myatt, P. B. Radha, S. P. Regan, W. Seka, W. T. Shmayda, R. W. Short, A. Shvydky, S. Skupsky, C. Sorce, C. Stoeckl, B. Yaakobi, J. A. Frenje, M. Gatu Johnson, R. D. Petrasso, A. Nikroo, and M. Farrell, "Overview of Cryogenic Target Experiments."

J. B. Oliver, T. J. Kessler, B. Charles, and C. Smith, "Fabrication of a Continuous-Enfolded Grating by Ion-Beam-Sputter Deposition," SVC Techcon 2014, Chicago, IL, 3–8 May 2014.

R. Betti, "Status and Prospects for High-Energy-Density Science on High-Power Lasers in the U.S.," International Symposium on Status and Prospects of High Energy Density Science by Giant Lasers, Tokyo, Japan, 1–4 June 2014.

The following presentations were made at the 20th High-Temperature Plasma Diagnostics, Atlanta, GA, 1–5 June 2014:

P.-Y. Chang, A. Agliata, D. H. Barnak, R. Betti, G. Fiksel, D. Hassett, D. J. Lonobile, J. Magoon, M. J. Shoup III, and C. S. Taylor, "Magnetized High-Energy-Density-Physics Platform on OMEGA."

A. Davies, R. Boni, S. Ivancic, R. Brown, D. H. Froula, D. Haberberger, J. D. Moody, B. Pollock, S. Ross, and D. Turnbull, "Polarimetry Diagnostic on OMEGA EP Using a 10-ps, 263-nm Probe Beam."

A. K. Davis, D. T. Micshel, S. X. Hu, R. S. Craxton, R. Epstein, V. N. Goncharov, I. V. Igumenshchev, T. C. Sangster, and D. H. Froula, "Mass Ablation Rate Measurements in Direct-Drive Cryogenic Implosions Using X-Ray Self-Emission Images."

V. Yu. Glebov, C. J. Forrest, K. L. Marshall, M. Romanofsky, T. C. Sangster, M. J. Shoup III, and C. Stoeckl, "A New Neutron Time-of-Flight Detector for Fuel Areal-Density Measurements on OMEGA."

M. C. Gregor, R. Boni, A. Sorce, C. A. McCoy, T. R. Boehly, D. D. Meyerhofer, M. Millot, J. H. Eggert, and P. M. Celliers,

“The Absolute Calibration of the OMEGA Streaked Optical Pyrometer at the Omega Laser Facility.”

M. Hohenberger, F. Albert, N. E. Palmer, J. J. Lee, T. Döppner, L. Divol, E. L. Dewald, B. Bachmann, A. G. MacPhee, G. LaCaille, D. K. Bradley, and C. Stoeckl, “Time-Resolved Measurements of the Hot-Electron Population in Ignition-Scale Experiments on the National Ignition Facility” (invited).

F. J. Marshall and P. B. Radha, “Masked Backlighter Technique Used to Simultaneously Image X-Ray Absorption and X-Ray Emission from an ICF Plasma.”

C. Stoeckl, M. Bedzyk, G. Brent, R. Epstein, G. Fiksel, D. Guy, V. N. Goncharov, S. X. Hu, S. Ingraham, D. W. Jacobs-Perkins, R. K. Jungquist, F. J. Marshall, C. Mileham, P. M. Nilson, T. C. Sangster, M. J. Shoup III, and W. Theobald, “Soft X-Ray Backlighting of Cryogenic Implosions Using a Narrowband Crystal Imaging System” (invited).

S. X. Hu, “Attosecond Control of Photoabsorption Through Manipulating the Electron–Electron Correlation,” 45th Annual DAMOP Meeting, Madison, WI, 2–6 June 2014.

The following presentations were made at CLEO 2014, San Jose, CA, 8–13 June 2014:

S.-W. Bahk, J. Bromage, and J. D. Zuegel, “A Linear Phase-Conjugation Imaging (LPCI) System.”

J. Bromage and C. Dorrer, “Pump-to-Signal Spatial Modulation Transfer in Noncollinear Optical Parametric Amplifiers.”

J. Bromage, R. G. Roides, S.-W. Bahk, C. Mileham, L. E. McIntire, C. Dorrer, and J. D. Zuegel, “A White-Light–Seeded Front End for Ultra-Intense Optical Parametric Chirped-Pulse Amplification.”

C. Dorrer, “Spectral and Temporal Properties of Optical Signals with Multiple Sinusoidal Phase Modulations.”

C. Dorrer, R. G. Roides, J. Bromage, and J. D. Zuegel, “Self-Phase Modulation Compensation in a Regenerative Amplifier Using Cascaded Second-Order Nonlinearities.”

J. D. Zuegel, J. Bromage, S.-W. Bahk, I. A. Begishev, J. Bunkenburg, T. Conley, C. Dorrer, D. H. Froula, H. Huang, R. K. Jungquist, C. Kellogg, T. J. Kessler, E. Kowaluk, M. Millecchia, S. F. B. Morse, A. V. Okishev, J. B. Oliver, T. Petersen, and J. Qiao, “Status of High-Energy OPCPA at LLE and Future Prospects” (invited).

The following presentations were made at the 44th Annual Anomalous Absorption Conference, Estes Park, CO, 8–13 June 2014.

K. S. Anderson, P. W. McKenty, T. J. B. Collins, J. A. Marozas, M. Lafon, and R. Betti, “An Implosion-Velocity Survey for Shock Ignition at the National Ignition Facility.”

D. H. Edgell, V. N. Goncharov, I. V. Igumenshchev, D. T. Michel, J. F. Myatt, and D. H. Froula, “Two-Plasmon–Decay Scaling for Improved-Performance Cryogenic Implosion Strategies.”

R. K. Follett, D. H. Edgell, R. J. Henchen, S. X. Hu, D. T. Michel, J. F. Myatt, H. Wen, and D. H. Froula, “Observation of Two-Plasmon–Decay Common Plasma Waves Using Ultra-violet Thomson Scattering.”

D. H. Froula, T. J. Kessler, G. Fiksel, I. V. Igumenshchev, V. N. Goncharov, H. Huang, S. X. Hu, J. H. Kelly, D. T. Michel, and A. Shvydky, “Mitigation of Cross-Beam Energy Transfer in Direct-Drive Implosions on OMEGA.”

J. A. Marozas, T. J. B. Collins, J. D. Zuegel, P. B. Radha, F. J. Marshall, and W. Seka, “Cross-Beam Energy Transfer Mitigation Strategy for NIF Polar Drive.”

J. F. Myatt, J. Shaw, J. Zhang, A. V. Maximov, R. W. Short, W. Seka, D. H. Edgell, D. H. Froula, D. F. DuBois, D. A. Russell, and H. X. Vu, “A Numerical Investigation of Two-Plasmon–Decay Localization in 60-Beam Spherical Implosion Experiments on OMEGA.”

S. P. Regan, R. Epstein, B. A. Hammel, L. J. Suter, H. A. Scott, M. A. Barrios, D. K. Bradley, D. A. Callahan, C. Cerjan, G. W. Collins, T. Dittrich, S. N. Dixit, T. Doeppner, M. J. Edwards, K. B. Fournier, S. Glenn, S. H. Glenzer, I. E. Golovkin, S. W. Haan, A. Hamza, D. Hinkel, H. Huang, O. A. Hurricane, C. A. Iglesias, N. Izumi, J. Jaquez, O. S. Jones, 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, N. B. Meezan, D. D. Meyerhofer, A. Nikroo, A. Pak, H. S. Park, P. K. Patel, J. Ralph, B. A. Remington, T. C. Sangster, V. A. Smalyuk, P. T. Springer, R. P. J. Town, and B. G. Wilson, “X-Ray Spectroscopy of Implosions at the National Ignition Facility” (invited).

W. Seka, J. F. Myatt, J. Zhang, R. W. Short, J. A. Delettrez, D. H. Froula, D. T. Michel, A. V. Maximov, V. N. Goncharov, and I. V. Igumenshchev, “Multibeam Interaction Processes Relevant to Direct-Drive Inertial Confinement Fusion.”

R. W. Short, J. F. Myatt, J. Zhang, and W. Seka, “Absolute and Convective Two-Plasmon Decay Driven by Multiple Laser Beams.”

A. A. Solodov, W. Theobald, K. S. Anderson, A. Shvydky, R. Epstein, P. M. Nilson, R. Betti, J. F. Myatt, C. Stoeckl, L. C. Jarrott, C. McGuffey, B. Qiao, F. N. Beg, M. S. Wei, and R. B. Stephens, “Simulations of Integrated Fast-Ignition Experiments on OMEGA.”

W. Theobald, R. Nora, M. Lafon, K. S. Anderson, A. Casner, M. Hohenberger, F. J. Marshall, D. T. Michel, C. Reverdin, X. Ribeyre, T. C. Sangster, W. Seka, A. A. Solodov, C. Stoeckl, A. Vallet, J. Peebles, M. S. Wei, B. Yaakobi, and R. Betti,

“Strong-Shock Generation and Laser–Plasma Interactions for Shock-Ignition Inertial Fusion” (invited).

R. Yan, J. Li, and C. Ren, “Intermittent Laser–Plasma Interactions and Hot-Electron Generation in Shock Ignition.”

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The following presentations were made at Research at High Pressure, Biddeford, ME, 22–27 June 2014:

M. C. Gregor, C. A. McCoy, T. R. Boehly, D. E. Fratanduono, and P. M. Celliers, “The Release Behavior of High-Density Carbon.”

C. A. McCoy, M. C. Gregor, T. R. Boehly, D. E. Fratanduono, and P. M. Celliers, “Sound-Speed Measurements with Non-Steady Wave Correction.”

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D. T. Michel, R. S. Craxton, A. K. Davis, R. Epstein, V. Yu. Glebov, V. N. Goncharov, S. X. Hu, I. V. Igumenshchev, D. D. Meyerhofer, P. B. Radha, T. C. Sangster, W. Seka, C. Stoeckl, and D. H. Froula, “Implosion Dynamics in Direct-Drive Experiments,” 41st EPS Conference on Plasma Physics, Berlin, Germany, 23–27 June 2014 (invited).

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K. S. Anderson, “A Conceptual Summary of Basic Mathematics in Laser Fusion,” Toyota-RIT Applied Math Initiative, Rochester, NY, 30 June–3 July 2014.