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## Publications and Conference Presentations

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### Publications

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T. R. Boehly, Y. Fisher, D. D. Meyerhofer, W. Seka, J. M. Soures, and D. K. Bradley, "The Effect of Optical Prepulse on Direct-Drive Inertial Confinement Fusion Target Performance," *Phys. Plasmas* **8**, 231 (2001).

V. Yu. Glebov, D. D. Meyerhofer, C. Stoeckl, and J. D. Zuegel, "Secondary-Neutron-Yield Measurements by Current-Mode Detectors," *Rev. Sci. Instrum.* **72**, 824 (2001).

F. J. Marshall, T. Ohki, D. McInnis, Z. Ninkov, and J. Carbone, "Imaging of Laser-Plasma X-Ray Emission with Charge-Injection Devices," *Rev. Sci. Instrum.* **72**, 713 (2001).

A. V. Okishev, M. D. Skeldon, R. L. Keck, and W. Seka, "A New High-Bandwidth, All-Solid-State Pulse-Shaping System for the OMEGA Laser Facility," in *Laser Optics 2000: Ultrafast Optics and Superstrong Laser Fields*, edited by A. A. Andreev and V. E. Yashin (SPIE, Bellingham, WA, 2001), pp. 69–73.

A. B. Shorey, S. D. Jacobs, W. I. Kordonski, and R. F. Gans, "Experiments and Observations Regarding the Mechanisms of Glass Removal in Magnetorheological Finishing," *Appl. Opt.* **40**, 20 (2001).

C. Stoeckl, V. Yu. Glebov, D. D. Meyerhofer, W. Seka, B. Yaakobi, R. P. J. Town, and J. D. Zuegel, "Hard X-Ray Detectors for OMEGA and NIF," *Rev. Sci. Instrum.* **72**, 1197 (2001).

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### Forthcoming Publications

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R. Adam, R. Sobolewski, and M. Darula, "Subpicosecond Dynamics of the Switching Process in Y-Ba-Cu-O Josephson Junctions," to be published in *Oxide Superconductors: Physics and Nano-engineering IV*.

S. R. Arrasmith, S. D. Jacobs, I. A. Kozhinova, A. B. Shorey, D. Golini, W. I. Kordonski, S. Hogan, and P. Dumas, "Development and Characterization of Magnetorheological Fluids for Optical Finishing," to be published in the *Proceedings of Fine Powder Processing '99*, University Park, PA, 20–22 September 1999.

A. Babushkin, M. J. Harvey, and M. D. Skeldon, "The Output Signal-to-Noise Ratio of a Nd:YLF Regenerative Amplifier," to be published in *Applied Optics*.

R. Betti and J. P. Freidberg, "Low- $\beta$ , Magnetohydrodynamic Tokamak Equilibria with Poloidal Transonic Flow," to be published in *Physical Review Letters*.

T. R. Boehly, J. A. Delettrez, J. P. Knauer, D. D. Meyerhofer, B. Yaakobi, R. P. J. Town, and D. Hoarty, "The Effect of Shock Heating on the Stability of Laser-Driven Targets," to be published in *Physical Review Letters*.

T. R. Boehly, Y. Fisher, D. D. Meyerhofer, W. Seka, J. M. Soures, and D. K. Bradley, "The Effect of Optical Prepulses on Direct-Drive Inertial Confinement Fusion Target Performance," to be published in *Physics of Plasmas*.

T. R. Boehly, V. N. Goncharov, O. Gotchev, J. P. Knauer, D. D. Meyerhofer, D. Oron, S. P. Regan, Y. Srebro, W. Seka, D. Shvarts, S. Skupsky, and V. A. Smalyuk, "The Effect of Plasma Formation Rate and Beam Smoothing on Laser Imprinting," to be published in *Physical Review Letters*.

D. P. Butler, Z. Celik-Butler, and R. Sobolewski, "Y-Ba-Cu-O as an Infrared Radiation Sensing Material," to be published in the *Handbook of Advanced Electronic and Photonic Materials* (Academic Press, NY).

W. R. Donaldson, J. H. Kelly, R. L. Keck, and R. Boni, "Predicting and Measuring Optical Pulse Shapes on the OMEGA Laser System," to be published in *OSA Technical Digest*.

J. A. Frenje, D. G. Hicks, C. K. Li, F. H. Séguin, R. D. Petrasso, K. Fletcher, H. Olliver, S. Padalino, S. Thompson, J. M. Soures, S. Roberts, C. Sorce, T. C. Sangster, and T. W. Phillips, "CR-39 Tract Detector Response to Charged Particles and Neutrons," to be published in the *Review of Scientific Instruments*.

G. N. Gol'tsman, O. Okunev, G. Chulkova, A. Dzardanov, A. Lipatov, A. Semenov, K. Smirnov, B. Voronov, C. Williams, and R. Sobolewski, "Picosecond Superconducting Single-Photon Optical Detector," to be published in *Applied Physics Letters*.

V. N. Goncharov, P. W. McKenty, S. Skupsky, R. P. J. Town, R. Betti, and C. Cherfils-Clérouin, "Modeling Hydrodynamic Instabilities in Inertial Confinement Fusion Targets," to be published in *Physics of Plasmas*.

P. A. Jaanimagi, R. Boni, and R. L. Keck, "Neutron-Induced Background in CCD Detectors," to be published in the *Review of Scientific Instruments*.

C. K. Li, D. G. Hicks, F. H. Séguin, J. Frenje, R. D. Petrasso, J. M. Soures, P. B. Radha, V. Yu. Glebov, C. Stoeckl, J. P. Knauer, F. J. Marshall, D. D. Meyerhofer, S. Skupsky, S. Roberts, C. Sorce, T. C. Sangster, T. W. Phillips, and M. D. Cable, "Measuring Fusion Yields, Areal Densities, and Ion Temperatures of Imploded Capsules at OMEGA," to be published in the *Review of Scientific Instruments*.

V. Lobatchev and R. Betti, "Ablative Stabilization of the Deceleration-Phase Rayleigh-Taylor Instability," to be published in *Physical Review Letters*.

A. E. Marino, S. D. Jacobs, L. L. Gregg, G. Chen, and Y. Due, "Durable Phosphate Glasses with Lower Transition Temperatures," to be published in the *Journal of Non-Crystalline Solids*.

J. A. Marozas, "Self- and Cross-Phase Modulation of High-Intensity Laser Beams Emerging from a Diamond-Turned KDP Wedge," to be published in the *Journal of the Optical Society of America B*.

J. A. Marozas, S. P. Regan, J. H. Kelly, D. D. Meyerhofer, W. Seka, and S. Skupsky, "Laser Beam Smoothing Caused by the Small-Spatial-Scale  $\beta$ -Integral," to be published in the *Journal of the Optical Society of America B*.

J. A. Marozas, J. D. Zuegel, D. Jacobs-Perkins, and J. H. Kelly, "Angular Spectrum Representation of Pulsed Laser Beams with Two-Dimensional Smoothing by Spectral Dispersion," to be published in the *Journal of the Optical Society of America B*.

R. L. McCrory, R. E. Bahr, R. Betti, T. R. Boehly, T. J. B. Collins, R. S. Craxton, J. A. Delettrez, W. R. Donaldson, R. Epstein, J. Frenje, V. Yu. Glebov, V. N. Goncharov, O. V. Gotchev, R. Q. Gram, D. R. Harding, D. G. Hicks, P. A. Jaanimagi, R. L. Keck, J. Kelly, J. P. Knauer, C. K. Li, S. J. Loucks, L. D. Lund, F. J. Marshall, P. W. McKenty, D. D. Meyerhofer, S. F. B. Morse, R. D. Petrasso, P. B. Radha, S. P. Regan, S. Roberts, F. Seguin, W. Seka, S. Skupsky, V. A. Smalyuk, C. Sorce, J. M. Soures, C. Stoeckl, R. P. J. Town, M. D. Wittman, B. Yaakobi, and J. D. Zuegel, "OMEGA ICF Experiments and Preparation for Direct-Drive Ignition on NIF," to be published in the proceedings of the 18<sup>th</sup> IAEA Fusion Energy Conference.

A. V. Okishev, R. Boni, M. Millecchia, P. A. Jaanimagi, W. R. Donaldson, R. L. Keck, W. Seka, K. V. Dukelsky, M. A. Eronyan, V. S. Shevandin, G. A. Ermolaeva, G. Nikolaev, and V. B. Shilov, "Unique High-Bandwidth, UV Fiber Delivery System for the OMEGA Diagnostic Applications," to be published in the *IEEE Journal on Selected Topics in Quantum Electronics*.

F. H. Séguin, C. K. Li, D. G. Hicks, J. A. Frenje, R. D. Petrasso, J. M. Soures, V. Yu. Glebov, C. Stoeckl, P. B. Radha, D. D. Meyerhofer, S. Roberts, C. Sorce, T. C. Sangster, and M. D. Cable, "Diagnostic Use of Secondary D<sup>3</sup>He Proton Spectra for D-D OMEGA Targets," to be published in *Physics of Plasmas*.

M. D. Skeldon, "An Optical-Pulse-Shaping System Based on an Electrooptic Modulator Driven by an Aperture-Coupled-Stripline Electrical-Waveform Generator," to be published in the *Journal of the Optical Society of America B*.

S. Skupsky, R. L. McCrory, R. E. Bahr, T. R. Boehly, T. J. B. Collins, R. S. Craxton, J. A. Delettrez, W. R. Donaldson, R. Epstein, V. N. Goncharov, R. Q. Gram, D. R. Harding, P. A. Jaanimagi, R. L. Keck, J. P. Knauer, S. J. Loucks, F. J. Marshall, P. W. McKenty, D. D. Meyerhofer, S. F. B. Morse, O. V. Gotchev, P. B. Radha, S. P. Regan, W. Seka, V. A. Smalyuk, J. M. Soures, C. Stoeckl, R. P. J. Town, M. D. Wittman, B. Yaakobi, J. D. Zuegel, R. D. Petrasso, D. G. Hicks, and C. K. Li, "Recent Progress in Direct-Drive ICF Research at the Laboratory for Laser Energetics," to be published in SPIE's Proceedings of the XXVI European Conference on Laser Interaction with Matter.

V. A. Smalyuk, T. R. Boehly, L. S. Iwan, T. J. Kessler, J. P. Knauer, F. J. Marshall, D. D. Meyerhofer, C. Stoeckl, B. Yaakobi, and D. K. Bradley, "Fourier-Space Image Processing for Spherical Experiments on OMEGA," to be published in the *Review of Scientific Instruments*.

V. A. Smalyuk, B. Yaakobi, J. A. Delettrez, F. J. Marshall, and D. D. Meyerhofer, "Compressed-Shell Integrity Measurements in Spherical Implosion Experiments," to be published in *Physics of Plasmas*.

V. A. Smalyuk, B. Yaakobi, J. A. Delettrez, F. J. Marshall, D. D. Meyerhofer, S. P. Regan, and R. P. J. Town, "Evolution of Shell Nonuniformities Near Peak Compression of Spherical Implosion," to be published in *Physical Review Letters*.

D. J. Smith, J. A. Warner, N. E. LeBarron, T. J. Kessler, and S. LaDelia, "The Development of Ion-Etched Phase Plates," to be published in *Applied Optics*.

E. A. Startsev and C. J. McKinstrie, "Relativistic Ponderomotive Dynamics of a Test Particle in a Plasma," to be published in *Physical Review E*.

B. Yaakobi, C. Stoeckl, T. Boehly, D. D. Meyerhofer, and W. Seka, "Measurement of Preheat due to Fast Electrons in Laser Implosions," to be published in SPIE's Proceedings of the XXVI European Conference on Laser Interaction with Matter.

J. D. Zuegel and D. W. Jacobs-Perkins, "An Efficient, High-Frequency Bulk Phase Modulator," to be published in *Applied Optics*.

J. D. Zuegel and S. A. Letzring, "Bulk Microwave Phase Modulators for Smoothing by Spectral Dispersion," to be published in *Applied Optics*.

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### Conference Presentations

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L. Waxer and J. Kelly, "Spectral Sculpting for NIF Demonstration Project," Third Annual Joint US-JAPAN Workshop on Laser-Driven Inertial Fusion Energy (IFE), Livermore, CA, 25–27 January 2001.

W. Seka, S. P. Regan, D. D. Meyerhofer, B. Yaakobi, C. Stoeckl, R. S. Craxton, R. W. Short, H. A. Baldis, and J. Fuchs, "Multibeam Interaction Experiments Under Direct-Drive NIF Conditions," 4th International Workshop on Laser-Plasma Interaction Physics, Banff, Alberta, Canada, 21–24 February 2001.

