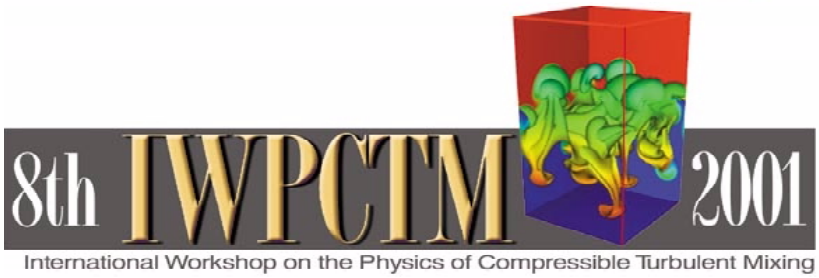
# 8TH INTERNATIONAL WORKSHOP ON THE PHYSICS OF COMPRESSIBLE TURBULENT MIXING

**December 9 – 14, 2001**

**CALIFORNIA INSTITUTE OF TECHNOLOGY**
**PASADENA, CALIFORNIA, USA**

# PROGRAM SUMMARY




**The 8th IWPCTM**
**is hosted by the**
**Lawrence Livermore National Laboratory**
**and is co-hosted by the**
**California Institute of Technology**[†]

**All oral sessions and discussions will be held in the**
**Beckman Institute Auditorium**

**Poster sessions will be held in the**
**Winnett Lounge and Club Room**

[†]Partial financial support was generously provided by the
California Institute of Technology

## Transportation

Buses depart from the Pasadena Hilton to campus
at 7:45 Monday – Friday, December 10 – 14.

Buses depart from campus to the Pasadena Hilton
at 17:50 Monday – Thursday, December 10 – 13,
and at 12:15 on Friday, December 14.

## Refreshments

Refreshments will be available at 8:00 and at breaks
Monday – Friday, December 10 – 14.

# SUNDAY, DECEMBER 9, 2001

| | |
|---|---|
| 17:00 – 21:00 | Registration<br>Pasadena Hilton |
| 18:00 – 21:00 | Reception<br>Pasadena Hilton |
| Guest Speaker: | **E. I. Moses**<br>**NIF Project Manager**<br>**(Lawrence Livermore National Laboratory)** |

# MONDAY, DECEMBER 10, 2001

8:15 – 8:30 Welcome and Opening Remarks:
S. Koonin / O. Schilling

**Experimental Session I**
**Chair: H. F. Robey**
**(Lawrence Livermore National Laboratory)**

8:30 – 9:30 Review Talk:
A Review on RT and RM Instability and TM Experiments
*J.-F. Haas and S. G. Zaytsev (Comissariat à l'Energie Atomique and Krzhizhanovsky Power Engineering Institute)*

9:30 – 9:50 The Influence of Scaling for Periodical Perturbations on Development of Turbulent Mixing on a Gas-Liquid Interface (E7)
*M. Bliznetsov, E. Meshkov, N. Nevmerzhitsky, A. Nikulin, E. Sen'kovsky, and E. Sotskov (Russian Federal Nuclear Center-VNIIEF)*

9:50 – 10:10 Experimental Study Into Rayleigh-Taylor Turbulent Mixing Zone Heterogeneous Structure (E31)
*Yu. A. Kucherenko, A. P. Pylaev, V. D. Murzakov, A. V. Belomestnih, V. N. Popov, and A. A. Tyaktev (Russian Federal Nuclear Center-VNIITF)*

10:10 – 10:30 Rayleigh-Taylor Instability at a Tilted Interface in Incompressible Laboratory Experiments and Compressible Numerical Simulations (E14)
*J. M. Holford, S. B. Dalziel, and D. L. Youngs (Cambridge University and Atomic Weapons Establishment)*

**10:30 – 10:50 Break: Beckman Institute (courtyard)**

**Experimental Session II**
**Chair: J.-F. Haas**
**(Commissariat à l'Energie Atomique)**

10:50 – 11:10 Measurements of Turbulence Correlations in Low Atwood Number Rayleigh-Taylor Mixing (E32)
*P. Ramaprabhu and M. J. Andrews (Texas A & M University)*

11:10 – 11:30 Experimental Investigations of the Self-Similar Mixing Mode of Different Density Gases in the Earth's Gravitational Field (E28)
*Yu. A. Kucherenko, O. E. Shestachenko, Yu. A. Puskunov, E. V. Sviridov, V. M. Medvedev, and A. I. Baishev (Russian Federal Nuclear Center – VNIITF)*

11:30 – 11:50 Mix Experiments Using a Two Dimensional Convergent Shock Tube (E13)
*D. A. Holder, C. Barton, and A. V. Smith (Atomic Weapons Establishment)*

**12:00 – 13:15 Lunch: Winnett Lounge**

**Experimental Session III**
**Chair: J. W. Jacobs**
**(University of Arizona)**

13:15 – 13:35 The Evolution and Interaction of Two Shock-Accelerated Unstable Gas Cylinders (E40)
*C. Tomkins, K. Prestridge, P. Rightley, C. A. Zoldi, and R. Benjamin, (Los Alamos National Laboratory)*

13:35 – 13:55 PLIF Flow Visualization of a Shock-Accelerated Air/SF6 Interface (E18)
*J. W. Jacobs and V. V. Krivets (University of Arizona, Tuscon)*

13:55 – 14:15 Shock Tube Experiments on Richtmyer-Meshkov Instability Across a Chevron Profiled Interface (E39)
*A. V. Smith, D. A. Holder, C. J. Barton, A. P. Morris, and D. L. Youngs (Atomic Weapons Laboratory)*

14:15 – 14:35 Study of Diverging and Converging Spherical Shock Waves Induced by Micro Explosives and Their Interaction with Product Gases (E15)
*S .H. R. Hosseini and K. Takayama (Tohoku University)*

**14:35 – 14:55 Break: Beckman Institute (courtyard)**

**Experimental Session IV**
**Chair: K. Budil**
**(Lawrence Livermore National Laboratory)**

14:55 – 15:15 The Dependence of the Shock Induced Richtmyer-Meshkov Instability on Dimensionality and Density Ratio (T35)
*A. Yosef-Hai, O. Sadot, D. Kartoon, D. Oron, E. Sarid, G. Ben-Dor, and D. Shvarts (Ben-Gurion University, Nuclear Research Center, Negev)*

15:15 – 15:35 Effects of High Initial Amplitudes and High Mach Numbers on the Evolution of the RM Instability: II. Experimental Study (E36)
*O. Sadot, A. Yosef-Hai, A. Rikanati, D. Oron, G. Ben-Dor, and D. Shvarts (Nuclear Research Center, Negev and Ben-Gurion University)*

15:35 – 15:55 Experimental Study of a Strongly-Shocked Gas Interface With Visualized Initial Conditions (E27)
*J. G. Oakley, M. H. Anderson, and R. Bonazza (University of Wisconsin, Madison)*

15:55 – 16:15 Compressible Vortex Rings (E8)
*M. Brouillette and C. Hébert (Université de Sherbrooke)*

**16:15 – 17:45 General Poster Session: Winnett Lounge and Club Room**

# TUESDAY, DECEMBER 11, 2001

8:15 – 8:30 Announcements: O. Schilling

**Experimental Session V**
**Chair: T. A. Peyser**
**(Lawrence Livermore National Laboratory)**

8:30 – 9:30 Review Talk: The Experimental Study of Excitation and Development of the Hydrodynamic Instability in the Mixing Zone Separating Gases of Different Densities at their Accelerated Motion
*S. G. Zaytsev (Krzhizhanovsky Power Engineering Institute)*

9:30 – 9:50 Compressible Hydrodynamics on the Omega Laser, Motivated by Astrophysics (E10)
*R. P. Drake, P. Keiter, K. E. Korreck, K. Dannenberg, H. F. Robey, T. Perry, J. O. Kane, B. A. Remington, R. J. Wallace, O. A. Hurricane, D. D. Ryutov, J. Knauer, R. Teyssier, A. Calder, R. Rosner, B. Fryxell, D. Arnett, Y. Zhang, J. Glimm, N. Turner, J. Stone, R. McCray, and J. Grove (University of Michigan, Lawrence Livermore National Laboratory, University of Rochester, Laboratory for Laser Energetics, Comissariat à l'Energie Atomique, University of Chicago, University of Arizona, State University of New York, Stony Brook, University of Maryland, University of Colorado, and Los Alamos National Laboratory)*

9:50 – 10:10 Improvements to Convergent Cylindrical Plasma Mix Experiments Using Laser Direct Drive (E4)
*C. W. Barnes, S. H. Batha, A. M. Dunne, N. E. Lanier, G. R. Magelssen, T. J. Murphy, K W. Parker, S. Rothman, J. M. Scott, and D. Youngs (Los Alamos National Laboratory and Atomic Weapons Establishment)*

10:10 – 10:30 The Interaction of Supernova Blast Waves with Interstellar Clouds: Experiments on the OMEGA Laser (E42)
*R. I. Klein, H. Robey, T. Perry, and J. Greenough (Lawrence Livermore National Laboratory and University of California, Berkeley)*

**10:30 – 10:50 Break: Beckman Institute (courtyard)**

**Experimental Session VI**
**Chair: G. Dimonte**
**(Lawrence Livermore National Laboratory)**

10:50 – 11:10 An Experimental Study of the Effect of Shock Proximity on the Richtmyer-Meshkov Instability at High Mach Number (E12)
*S. G. Glendinning, D. G. Braun, M. J. Edwards, W. W. Hsing, B. F. Lasinski, H. Louis, J. Moreno, T. A. Peyser, B. A. Remington, H. F. Robey, E. J. Turano, C. P. Verdon, and Y. Zhou (Lawrence Livermore National Laboratory)*

11:10 – 11:30 A Vortex Model for Studying the Effect of Shock Proximity on Richtmyer-Meshkov Instability at High Mach Number (E46)
*H. F. Robey and S. G. Glendinning (Lawrence Livermore National Laboratory)*

11:30 – 11:50 Laser-Based High Pressure, High Strain-Rate Solid-State Experiments (E19)
*D. H. Kalantar, J. Belak, J. D. Colvin, M. Kumar, K. T. Lorenz, K. O. Mikaelian, S. Pollaine, B. A. Remington, S. V. Weber, L. G. Wiley, A. M. Wiley, A. Loveridge-Smith, J. S. Wark, and M. A. Myers (Lawrence Livermore National Laboratory, Oxford University, and University of California, San Diego)*

**12:00 – 13:15 Lunch: Winnett Lounge**

**Computational Session I**
**Chair: T. L. McAbee**
**(Lawrence Livermore National Laboratory)**

13:15 – 13:35 A Comparison of High-Resolution 3D Numerical Simulations of Turbulent Rayleigh-Taylor (RT) Instability: Alpha-Group Collaboration (C10)
*G. Dimonte, A. Dimits, S. Weber, D. L. Youngs, A. C. Calder, B. Fryxell, J. Biello, L. Dursi, P. MacNiece, K. Olson, P. Ricker, R. Rosner, F. Timmes, H. Tufo, Y.-N. Young, M. Zingale, M. J. Andrews, P. Ramaprabhu, S. Wunsch, C. Garasi, and A. Robinson (Lawrence Livermore National Laboratory, Atomic Weapons Establishment, University of Chicago, NASA Goddard Space Flight Center, Texas A & M University, and Sandia National Laboratories)*

13:35 – 13:55 Study of Turbulent Gravitational Mixing at Large DensityDifferences Using Direct 3D Numerical Simulation (C44)
*Yu. V. Yanilkin, V. P. Statsenko, S. V. Rebrov, N. I. Selchenkova, O. G. Sin'kova, A. L. Stadnik, and A. Ya. Uchayev (Russian Federal Nuclear Center – VNIIEF)*

13:55 – 14:15 Numerical Methods for Determination of Mix (C11)
*S. Dutta, E. George, J. Glimm, J. Grove, X. Li, A. Marchese, D. H. Sharp, Z. Xu, and Y. Zhang (State University of New York, Stony Brook, Los Alamos National Laboratory, and Brookhaven National Laboratory)*

14:15 – 14:35 Modes' Interaction on Nonlinear Stage of Richtmyer-Meshkov Instability Evolution (C1)
*V. I. Anisimov, A. V. Polionov, and S. I. Balabin (Russian Federal Nuclear Center-VNIITF)*

**14:35 – 14:55 Break: Beckman Institute (courtyard)**

**Computational Session II**
**Chair: H. Takabe**
**(Osaka University)**

14:55 – 15:15 Numerical Investigation of a Laser Induced Turbulent Mixing Zone (C35)
*P. Seytor and M. Legrand (Commissariat à l'Energie Atomique)*

15:15 – 15:35 Development and Validation of a 2D Turbulent Mix Model (C46)
*D. L. Youngs (Atomic Weapons Establishment)*

15:35 – 15:55 Computational Modeling of Low-Mach-Number High-Atwood-Number Turbulent Mixing (C4)
*Wm. T. Ashurst and A. R. Kerstein (Sandia National Laboratories)*

15:55 – 16:15 Simulation of a Shock-Accelerated Gas Cylinder and Comparison with Experimental Images and Velocity Fields (C50)
*C. A. Zoldi, K. Prestridge, P. M. Rightley, and R. F. Benjamin (Los Alamos National Laboratory and State University of New York, Stony Brook)*

**16:15 and 16:45** **Shuttle departs from campus to Pasadena Hilton**

**16:45 – 18:00** **Experimental Discussion:**
**Pasadena Hilton, Pacific Room C**

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**Computational and Theoretical Poster Session:**
**Pasadena Hilton, Pacific Room A/B**

# WEDNESDAY, DECEMBER 12, 2001

8:15 – 8:30 Announcements: O. Schilling

**Computational Session III**
**Chair: J. Glimm**
**(State University of New York, Stony Brook)**

8:30 – 9:30 Review Talk:
Review of Numerical Simulation of Mixing due to Rayleigh-Taylor and Richtmyer-Meshkov Instabilities
*D. L. Youngs (Atomic Weapons Establishment)*

9:30 – 9:50 Transition Stages of Rayleigh-Taylor Instability Between Miscible Fluids (C56)
*A. W. Cook and P. E. Dimotakis (Lawrence Livermore National Laboratory and California Institute of Technology)*

9:50 – 10:10 Application of a Laser Shock Tube for the Study of Supersonic Gas Flows and the Development of Hydrodynamic Instabilities in Layered Media (C25)
*I. G. Lebo and V. D. Zvorykin (Technical University MIREA and P. N. Lebedev Physical Institute)*

10:10 – 10:30 Shock-Planar Curtain Interactions: Strong Secondary Baroclinic Deposition and the Emergence of Coherent and Random Vortex Projectiles (VPs) and Decaying Stratified Turbulence (C48)
*S. Zhang and N. J. Zabusky (Rutgers University)*

**10:30 – 10:50 Break: Beckman Institute (courtyard)**

**Computational Session IV**
**Chair: J. Grove**
**(Los Alamos National Laboratory)**

10:50 – 11:10 One-Dimensional Simulation of the Effects of Unstable Mix on Neutron and Charged-Particle Yield from Laser-Driven Implosion Experiments (C13)
*R. Epstein, J. A. Delettrez, V. Yu. Glebov, V. N. Goncharov, P. W. McKenty, P. B. Radha, S. Skupsky, V. A. Smalyuk, and C. Stoeckl (University of Rochester, Laboratory for Laser Engineering)*

11:10 – 11:30 Modeling Turbulent Mixing in Inertial Confinement Fusion Implosions (C37)
*Y. Srebro, D. Kushnir, Y. Elbaz, and D. Shvarts (Ben-Gurion University, Nuclear Research Center, Negev, and Hebrew University)*

11:30 – 11:50 Dispersal of Mass and Circulation Following Shock-Sphere (Axisymmetric) and Shock Cylinder Interactions: Effects Arising from Shock Cavity Collapse, Vortex Double Layers; Density-Gradient Intensification and Vortex Projectiles (C29)
*G. Peng, S. Gupta, S. Zhang, and N. J. Zabusky (Rutgers University*)

**12:00 – 13:15 Lunch: Winnett Lounge**

**Computational Session V**
**Chair: N. J. Zabusky**
**(Rutgers University)**

13:15 – 13:35 Code to Code Comparisons for the Problem of Shock Acceleration of Diffuse Dense Gaseous Cylinder (C16)
*J. A. Greenough, W. J. Rider, C. A. Zoldi, and J. R. Kamm (Lawrence Livermore National Laboratory and Los Alamos National Laboratory)*

13:35 – 13:55 Molecular Dynamic Simulation of Shock and Richtmyer-Meshkov Instability in Cylindrical Geometry (C26)
*K. Nishihara, V. Zhakhovskii, and M. Abe (Osaka University, Institute of Laser Engineering)*

13:55 – 14:15 Large Eddy Simulation of Strong Shock Richtmyer-Meshkov Instability (C33)
*R. Samtaney, D. I. Pullin, T. Voelkl and D. J. Hill (California Institute of Technology)*

14:15 – 14:35 Spectral and High-Order Compact Methods for Shock-Induced Mixing (C8)
*A. W. Cook, W. Cabot, J. A. Greenough, and S. V. Weber (Lawrence Livermore National Laboratory)*

**14:35 – 14:55 Break: Beckman Institute (courtyard)**

**Computational Session VI**
**Chair: B. T. Goodwin**
**(Lawrence Livermore National Laboratory)**

14:55 – 15:15 Turbulent Mixing Nuclear Burning in Type Ia Supernova Explosion Based on Bubble Statistical Mechanics (C38)
*H. Takabe, S. Yamada, K. Kobayashi, A. Mizuta, and K. Nomoto (Osaka University, Institute of Laser Engineering and University of Tokyo)*

15:15 – 15:35 High Order Numerical Methods for the 2D Richtmyer-Meshkov Instability (C54)
*W.-S. Don, D. Gottlieb, C.-W. Shu, and L. Jameson (Brown University and Lawrence Livermore National Laboratory)*

15:35 – 15:55 Compressibility Effects in a High-Speed, Reacting Shear Layer: An Investigation Using DNS (C27)
*C. Pantano and S. Sarkar (University of California, San Diego)*

15:55 – 16:15 A Semi-Empirical Model for Turbulent Diffusion of Magnetic Field to Accelerated Plasma (C19)
*E. V. Gubkov, V. A. Zhmailo, and Yu. V. Yanilkin (Russian Federal Nuclear Center-VNIIEF)*

**16:15 – 17:45 Computational Discussion: Beckman Institute Auditorium**

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**Experimental and Theoretical Poster Session:**
**Winnett Lounge**

**18:00 – 21:00 Banquet: Pasadena Hilton**
**Guest Speaker: Z. Nagin Cox**
**(NASA, Jet Propulsion Laboratory)**

# THURSDAY, DECEMBER 13, 2001

8:15 – 8:30 Announcements: O. Schilling

**Theoretical Session I**
**Chair: D. I. Meiron**
**(California Institute of Technology)**

8:30 – 9:30 Review Talk:
Three Dimensional Multi-Mode Rayleigh-Taylor and Richtmyer-Meshkov Instabilities at All Density Ratios (T14)
*D. Kartoon, D. Oron, L. Arazi, A. Rikanati, U. Alon, and D. Shvarts (Nuclear Research Center, Negev, Ben-Gurion University, Tel-Aviv University, and Weizmann Institute)*

9:30 – 9:50 Theoretical Methods for Determination of Mix (T7)
*B. Cheng, J. Glimm, and D. H. Sharp (Los Alamos National Laboratory, State University of New York, Stony Brook, and Brookhaven National Laboratory)*

9:50 – 10:10 Effects of High Initial Amplitudes and High Mach Numbers on the Evolution of the RM Instability: I. Theoretical Study (T23)
*A. Rikanati, D. Oron, O. Sadot, and D. Shvarts (Nuclear Research Center, Negev and Ben-Gurion University)*

10:10 – 10:30 Evolution of Arbitrary Perturbations in the Richtmyer-Meshkov Instability (T20)
*K. O. Mikaelian (Lawrence Livermore National Laboratory)*

**10:30 – 10:50 Break: Beckman Institute (courtyard)**

**Theoretical Session II**
**Chair: S. B. Dalziel**
**(Cambridge University)**

10:50 – 11:10 Spectral Analysis of Turbulent Flows Induced by RT and RM Instabilities (T38)
*V. F. Tishkin and N. V. Zmitrenko (Institute for Mathematical Modeling, Russian Academy of Sciences)*

11:10 – 11:30 A New Framework for Transitional and Turbulent Mixing (T36)
*Y. Zhou, H. F. Robey, and A. C. Buckingham (Lawrence Livermore National Laboratory)*

11:30 – 11:50 Rayleigh-Taylor and Richtmyer-Meshkov Instabilities for Fluids with a Finite Density Contrast (T2)
*S. I. Abarzhi, J. Glimm, and A. D. Liu (State University of New York, Stony Brook)*

**12:00 – 13:15 Lunch: Winnett Lounge**

**Theoretical Session III**
**Chair: T. T. Clark**
**(Los Alamos National Laboratory)**

13:15 – 13:35 Nonlinear Evolution of an Interface in the Richtmyer-Meshkov Instability (T19)
*K. Nishihara, C. Matsuoka, and Y. Fukuda (Ehime University and Osaka University Institute of Laser Engineering)*

13:35 – 13:55 Nonlinear Evolution of Unstable Fluid Interface (T1)
*S. I. Abarzhi (State University of New York, Stony Brook)*

13:55 – 14:15 Analytical Study of the Rayleigh-Taylor Instability in Compressible Fluids (T30)
*M. Tricottet and S. Bouquet (Commissariat à l'Energie Atomique)*

14:15 – 14:35 Non-Linear Stages for the RT and RM Instabilities (T13)
*N. A. Inogamov, M. Tricottet, A. M. Oparin, and S. Bouquet (Landau Institute for Theoretical Physics, Institute of Computer-Aided Design, and Commissariat à l'Energie Atomique))*

**14:35 – 14:55 Break: Beckman Institute (courtyard)**

**Theoretical Session IV**
**Chair: D. L. Youngs**
**(Atomic Weapons Establishment)**

14:55 – 15:15 Rate of Growth of the Linear Richtmyer-Meshkov Instability (T34)
*J. G. Wouchuk (University of Castilla)*

15:15 – 15:35 Efficient Perturbation Methods for Richtmyer-Meshkov and Rayleigh-Taylor Instabilities: Weakly Nonlinear Stage and Beyond (T32)
*M. Vandenboomegaerde, C. Cherfils, D. Galmiche, S. Gauthier, and P. A. Raviard (Commissariat à l'Energie Atomique)*

15:35 – 15:55 Response of Turbulent RANS Models to Self-Similar Variable Acceleration RT-Mixing: An Analytical 0D Analysis (T18)
*A. Llor (Commissariat à l'Energie Atomique)*

15:55 – 16:15 Combined Shear and Buoyancy Instabilities (T33)
*P. N. Wilson, M. J. Andrews, and F. H. Harlow (Texas A & M University and Los Alamos National Laboratory)*

**16:15 – 17:45 Theoretical Discussion: Beckman Institute Auditorium**

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**Experimental and Computational Poster Session:**
**Winnett Lounge**

# FRIDAY, DECEMBER 14, 2001

8:15 – 8:30 Announcements: O. Schilling

**Theoretical Session V**
**Chair: O. Schilling**
**(Lawrence Livermore National Laboratory)**

8:30 – 8:50 Rayleigh-Taylor Instability in Compressible Fluids (C12)
*Y. Elbaz, A. Rikanati, D. Oron, and D. Shvarts (Nuclear Research Center Negev, Ben Gurion University, and Weizmann Institute of Science)*

8:50 – 9:10 A Model for Instability Growth in Accelerated Solid Metals (T9)
*J. D. Colvin, M. Legrand, B. A. Remington, G. Schurtz, and S. V. Weber (Lawrence Livermore National Laboratory and Comissariat à l'Energie Atomique)*

9:10 – 9:30 Toy Models for the Growth Rate of Rayleigh-Taylor Instability (T10)
*S. B. Dalziel (Cambridge University)*

9:30 – 9:50 Spherical Combustion Layer in a TNT Explosion (T37)
*A. L. Kuhl and R. E. Ferguson (Lawrence Livermore National Laboratory and Krispin Technologies)*

9:50 – 10:10 A New Turbulent Two-Fluid RANS Model for KH, RT, and RM Mixing Layers (T4)
*P. Bailly and A. Llor (Commissariat*

10:10 – 10:30 Modeling Radiation Effects in Mixing Layers (T8)
*T. Clark and F. H. Harlow (Los Alamos National Laboratory)*

**10:30 – 10:50 Break: Beckman Institute (courtyard)**

10:50 – 11:10 Large- and Small-Scale Dynamics of Variable-Density Rayleigh-Taylor Instability-Induced Turbulent Mixing (T28)
*O. Schilling and A. W. Cook (Lawrence Livermore National Laboratory)*

**11:10 – 11:55 Summary Remarks**

**11:55 – 12:00 Closing Remarks: O. Schilling**

# EXPERIMENTAL POSTERS

Experimental Investigation of the Heavy and Light Media Separation in the Rayleigh-Taylor Turbulence Zone at Different Atwood Numbers (E2)
*Yu. A. Kucherenko, S. I. Balabin, R. I. Ardashova, A. P. Pylaev, O. E. Kozelkov, and V. D. Murzakov (Russian Federal Nuclear Center – VNIITF)*

Experimental Investigation into Influence of Stabilizing Properties of Transitional Layers Upon the Turbulent Mixing Evolution (E3)
*Yu. A. Kucherenko, S. I. Balabin, R. I. Ardashova, O. E. Kozelkov, A. V. Dulov, and I. A. Romanov (Russian Federal Nuclear Center – VNIITF)*

Mixing Between Two Compressing Cylinders (E5)
*S. H. Batha, K. W. Parker, C. W. Barnes, A. M. Dunne, N. E. Lanier, G. R. Magelssen, T. J. Murphy, S. Rothman J. M. Scott, and D. Youngs (Los Alamos National Laboratory and Atomic Weapons Establishment)*

Development of a Method for Studying the Interaction between Shock Wave and a Flame Front (E6)
*M. Bliznetsov, V. Dudin, S. Gerasimov, L. Houas, G. Jourdan, and A. Logvinov (Russian Federal Nuclear Center – VNIIEF, SarPTI, IUSTI/CNRS)*

Design of Flyer-Plate-Driven Compressible Turbulent Mix Experiments (E9)
*R. P. Drake (University of Michigan)*

Growth of Perturbations on Metals Interface at Oblique Collision with Supersonic Velocity of Contact Point Motion (E11)
*O. B. Drennov, A. L. Mikhaylov, P. N. Nizovtsev, and V. A. Raevskii (Russian Federal Nuclear Center – VNIIEF)*

From Linear to Turbulent Stages of the Richtmyer-Meshkov Instability Development in a Large Cross Section Shock Tube (E17)
*L. Houas, G. Jourdan, E. E. Meshkov, and L. Schwaederlé (Université de Provence and Russian Federal Nuclear Center – VNIIEF)*

RFNC-VNIITF Multifunctional Shock Tube to Investigate the Evolution of Instabilities in Nonstationary Gas Dynamic Flows (E20)
*Yu. A. Kucherenko, O. E. Shestachenko, S. I. Balabin, and A. P. Pylaev (Russian Federal Nuclear Center – VNIITF)*

Hydrodynamic Instabilities at a Shock Accelerated Bubble Gas-Gas Interface (E22)
*G. Layes, G. Jourdan, P. Roualdes, and L. Houas (IUSTI and Centre d'Etudes de Gramat)*

Experimental and Numerical Study of Shock Wave-Bubble Interaction (E23)
*K. Levy, O. Sadot, D. Oron, Y. Srebro, Y. Elbaz, A. Josef-Hai, G. Ben-Dor, and D. Shvarts (Ben-Gurion University and Nuclear Research Center, Negev)*

Laser-Driven Near Isentropic Compression of an Aluminum Flyer Plate (E24)
*K. T. Lorenz, D. Kalantar, J. Edwards, J. D. Colvin, and B. Remington (Lawrence Livermore National Laboratory)*

Single-Mode Incompressible Richtmyer-Meshkov Instability Experiments (E26)
*C. E. Niederhaus and J. W. Jacobs (NASA Glenn and University of Arizona)*

Modeling Laser Material Strength Experiments (E29)
*S. Pollaine, D. Kalantar, B. Remington, J. Belak, J. D. Colvin, J. Edwards, R. Minich, K. O. Mikaelian, K. T. Lorenz, S. V. Weber, L. G. Wiley, D. Paisley, A. Hauer, J. S. Wark, A. Loveridge, A. M. Allen, T. R. Boehly, and M. A. Meyers (Lawrence Livermore National Laboratory, Los Alamos National Laboratory, Oxford University, University of Rochester, and University of California, San Diego)*

Experiments and Simulations of Instabilities in a Shock-Accelerated Gas Cylinder (E30)
*K. Prestridge, C. A. Zoldi, P. Vorobieff, P. M. Rightley, and R. F. Benjamin (Los Alamos National Laboratory, State University New York, Stony Brook, and University of New Mexico)*

Experimental Study of the Interaction of a Strong Shock with a Spherical Density Inhomogeneity (E34)
*H. F. Robey, T. S. Perry, R. I. Klein, J. A. Greenough, J. O. Kane, and T. R. Boehly (Lawrence Livermore National Laboratory, University of California, Berkeley, University of Rochester)*

Turbulent Transition in a High Reynolds Number, Rayleigh-Taylor Unstable Plasma Flow (E35)
*H. F. Robey, Y. K. Zhou, A. C. Buckingham, P. Keiter, B. A. Remington, and R. P. Drake (Lawrence Livermore National Laboratory and University of Michigan)*

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