IUTAM International Union of Theoretical and Applied Mechanics

IUTAM Symposium on

Dynamic Instabilities in Solids

Madrid, SPAIN, May 17-20, 2016

Lectures include 30 minutes talk + 5 minutes discussion

Tuesday – May 17

9:45 – 10:20	**J. F. Molinari** *Critical length scale predicts transition in adhesive wear mechanisms*
	Coffee Break
10:50 – 11:25	**E. Bouchbinder** *Dynamic instabilities at frictional interfaces*
11:25 – 12:00	**E. Brener** *The nucleation of rapid frictional slip*
12:00 – 12:35	**D. Misseroni** *Flutter instabilities induced by Coulomb friction on continuous systems*
	Lunch
14:20 – 14:55	**C. Daraio** *Bistable metamaterials for impulse absorption and mechanical logic gates*
14:55 – 15:30	**W. Guangyang** *Dynamic stability of biaxially strained thin sheets under high strain rates: response to local perturbations*
15:30 – 16:05	**G. Vadillo** *Collective behaviour and spacing of necks in ductile plates subjected to dynamic biaxial loading*
	Coffee Break
16:35 – 17:10	**N. Jacques** *Instabilities and strain localization phenomena induced by damage development in ductile solids under dynamic loading conditions*
17:10 – 17:45	**J. Zhao** *A method to suppress buckling of liner in explosive implosion magnetic flux generator*
17:45 – 18:30	**Discussion**

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Wednesday – May 18	
9:45 – 10:20	**A. Needleman** *Effect of size on necking of dynamically loaded notched bars*
10:20 – 10:55	**V. Deshpande** *Rayleigh-Taylor instabilities in granular media*
Coffee Break	
11:25 – 12:00	**M. Zikry** *Microstructural predictions of failure*
12:00 – 12:35	**A. Srivastava** *Interlacing of microstructural length scales and dynamic effects on ductile fracture*
12:35 – 13:10	**Q. Sun** *Control the dynamic instability of shape memory materials by internal length scales*
Lunch	
14:55 – 15:30	**C. Dascalu** *Multiscale modeling of dynamic failure in brittle solids*
15:30 – 16:05	**J. J. Rimoli** *On thermomechanical length-dependent effects and fractures pattern in ceramics*
16:05 – 16:40	**W. Sumelka** *Fractional calculus for extreme dynamics*
Coffee Break	
17:10 – 17:45	**S. Basu** *Fracture of glassy amorphous polymers under impact-like loading*
17:45 – 18:20	**I. Romero** *Unconditionally energy and entropy stable integration methods for nonlinear models of dissipative solids*
18:20 – 19:05	**Discussion**

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Thursday – May 19

9:10 – 9:45	**L. H. Dai** *Shear banding in metallic glasses*
9:45 – 10:20	**D. Rittel** *Adiabatic shear across the scales*
Coffee Break	
10:50 – 11:25	**K. Ravi-Chandar** *Perforation and penetration of thin plates by blunt projectiles*
11:25 – 12:00	**H. Waisman** *Towards stability analysis of a unified model for metal failure capturing shear banding and fracture*
12:00 – 12:35	**Z. Lovinger** *Modelling spontaneous adiabatic shear band formation in collapsing thick walled cylinders - approaching predictive capabilities*
Lunch	
14:20 – 14:55	**P. Longère** *Adiabatic shear banding assisted dynamic failure: modeling issues*
14:55 – 15:30	**D. Mohr** *Effect of strain rate and stress state on microstructural shear bands leading to ductile failure*
15:30 – 16:05	**S. Osovski** *Microstructural heterogeneity and dynamic shear localization*
Coffee Break	
16:35 – 17:10	**P. Chen** *Dynamic behavior of shock treated titanium alloys*
17:10 – 17:45	**C. Lu** *Statistics of slip avalanches in the deformation of metallic glass foams*
17: 45 –18:30	**Discussion**

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Friday – May 20	
10:00 – 10:35	**G. I Kanel** *The failure wave phenomena in glasses*
10:35 – 11:10	**A. Shukla** *Shock initiated instabilities in underwater structures*
Coffee Break	
11:40 – 12:15	**T. Cohen** *Cylindrical shock wave propagation in plane-stressed sheets*
12:15 – 12:50	**C. Czarnota** *Steady shock waves in porous ductile metallic materials*
Lunch	
14:35 – 15:10	**K. Volokh** *Modeling deformation and failure of elastomers at high strain rates*
15:10 – 15:45	**J. A. Rodríguez-Martínez** *Necking Identification of the critical wavelength responsible for the fragmentation of ductile rings expanding at very high strain rates*
Coffee Break	
16:15 – 17:00	**Discussion**