

# Schedule

Time	Wednesday, August 3	Thursday, August 4	Friday, August 5
8:00	Structure of Turbulent Boundary Layers Ron Adrian Arizona State University	Coherent Flow Structures and Vegetation Heidi Nepf, Lijun Zong and Jeffrey Rominger Massachusetts Institute of Technology	The Universe of Coherent Turbulent Structures in Gravity Current Flows Marcelo Garcia University of Illinois
9:00	The turbulent friction in 2D and 3D: it is all in the spectrum Pinaki Chakraborty, Tuan Tran, Nicholas Guttenberg, Hamid Kellay, Walter Goldberg, Nigel Goldenfeld and Gustavo Gioia	Coherent eddy structure in flow over plant canopies Edward G. Patton, Roger H. Shaw and John J. Finnigan	Instabilities in density stratified shear flows Gregory A. Lawrence, Jeffrey R. Carpenter and Edmund W. Tedford
9:20	The turbulent mean-velocity profile: it is all in the spectrum Gustavo Gioia, Nicholas Guttenberg, Nigel Goldenfeld and Pinaki Chakraborty	The influence of vortex shedding from upstream obstacles on fish preferred holding locations R. W. Jay Lacey, Jos G. M. van den Boogaart and Johan L. van Leeuwen	COHSTREX: The coherent structures in rivers and estuaries experiments A. Jessup, M. Barad, R. Branch, C. Chickadel, G. Farquharson, D. Fong, O. Fringer, S. Giddings, A. Horner-Devine, S. Monismith, W. Plant, R. Street, S. Talke and B. Wang
9:40	Structural attributes of turbulent flow over a complex topography R. Mejia-Alvarez, J. M. Barros and K. T. Christensen	The role of turbulent coherent structures in invertebrate drift Xavier-François Garcia, Ana M. Ricardo and Koen Blanckaert	COHSTREX: Coherent structures and turbulence statistics in a tidal river Stefan Talke, C. Chris Chickadel, Alex Horner-Devine and Andy Jessup
9:55	Role of coherent structures in the momentum balance over non-uniform boundaries Diane L. Foster and Sylvia B. Rodriguez-Abudo	Experimental study of vegetated flow: Three-dimensional flow structures and direct measurement of drag in aquatic canopies. Rafael O. Tinoco Lopez and Edwin A. Cowen	COHSTREX: Infrared measurement of circulation and spatial distribution of surface turbulence C. Chris Chickadel, Stefan Talke, Alexander Horner-Devine and Andrew Jessup
10:10	Coherent structure of turbulence within the atmospheric surface layer over an array cubes Atsushi Inagaki and Manabu Kanda	A kappa-epsilon model for flow through aquatic vegetation incorporating the scales of turbulent stem wakes and vertical mixing layers Alexandra T. King and Edwin A. Cowen	A visible and infrared imaging investigation of the information content of coherent structures at a free surface Erika D. Johnson and Edwin A. Cowen
10:25	The influence of permeability on the dynamics of wall turbulence Costantino Manes, Davide Poggi and Luca Ridolfi	Characterization of vortex dynamics over rigid and flexible vegetation canopies in a fluvial environment Tim I. Marjoribanks, Richard J. Hardy, Daniel R. Parsons and Stuart N. Lane	Internal waves and instabilities in the Fraser River estuary Ted Tedford, Jeffrey Carpenter, Roger Pieters, Rich Pawlowicz and Greg Lawrence
10:40	Coffee break + Posters	Coffee break + Posters	Coffee break + Posters
12:00	Lunch (Diamond Alumni Center)	Lunch (Diamond Alumni Center)	Lunch (Highland Campus Pub Patio)
13:30	Numerical simulation of coherent structures in some open-channel flows Thorsten Stoesser Georgia Institute of Technology	The structure of turbulence within vegetated canopies on flat and complex terrain Gabriel Katul, Duke University and Davide Poggi, Politecnico di Torino	Interrelations between coherent structures, energy cascades, and secondary flows Vladimir Nikora, University of Aberdeen Ivan Marusic, University of Melbourne

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14:30	<p>Analysis of impulse events associated to entrainment of coarse particles Manousos Valyrakis, Panayiotis Diplas and Clint L. Dancey</p>	<p>Visualizing dust devils and other coherent structures in the atmospheric surface layer Steven P. Oncley, Oscar Hartogensis and Chenning Tong</p>	<p>Large-scale turbulent flow structures in pools Bruce J. MacVicar, Lana Obach, Colin Rennie and Jim Best</p>
14:50	<p>Turbulence modulation by suspended sediment in a zero-shear geophysical flow Sean J. Bennett, Joseph F. Atkinson and Yinting Hou</p>	<p>Critical reflections on the coherent flow structures paradigm in aeolian sediment transport Bernard O. Bauer, Andreas C.W. Baas, Ian J. Walker, Cheryl McKenna Neuman, Derek W.T. Jackson, Giles F.S. Wiggs and Patrick A. Hesp</p>	<p>Flow structures and morphodynamics of Colorado River pool-rapid complexes during an artificial flood Scott A. Wright and Matt Kaplinski</p>
15:10	<p>The interaction between hyporheic flow and coherent flow structures in the leeside of coarse-grained bedforms Gianluca Blois, Jim Best, Greg Sambrook Smith and Richard Hardy</p>	<p>Aeolian saltation response to turbulent winds Jean T. Ellis and Douglas J. Sherman</p>	<p>Turbulence and bed morphology in gravel-bed rivers: Feedbacks leading to large-scale flow pulsations Geneviève A. Marquis and André G. Roy</p>
15:25	<p>Surface manifestation of coherent flow structures: An experimental investigation Chris Unsworth, Daniel Parsons, Richard Hardy, Jim Best and Gareth Keevil</p>	<p>Adjustments in turbulence intensity, Reynolds stress and bed surface topography with armouring in aeolian systems. Cheryl McKenna Neuman</p>	<p>The effect of width-to-depth ratio on the development of coherent secondary flows over rough beds Stuart J. McLelland</p>
15:40	<p>Using accelerometer-embedded cobbles to relate the initiation of motion by lift or drag to near-bed turbulent structures Joel P.L. Johnson</p>	<p>The vertical structure of airflow turbulence and associated shear stresses within a boundary layer as a driver of sediment transport Z.S. Lee and A.C.W. Baas</p>	<p>Modelling coherent flow structures in sloping river confluences using computational fluid dynamics Matthew J. Tancock, Stuart N. Lane and Richard J. Hardy</p>
15:55	<p>On the interaction of bed topography, instantaneous shear stress and sediment flux in an experimental channel Arvind Singh and Efi Foufoula-Georgiou</p>	<p>Topographic forcing, quadrant event distributions, and sand transport responses in near-surface flow over coastal foredunes Ian J. Walker, Connie Chapman, Patrick A. Hesp, Bernard O. Bauer and Robin G.D. Davidson-Arnott</p>	<p>Coherent turbulent structures and sediment transport dynamics in unsteady, particle laden density currents M. Tilston, R.W.C. Arnott and C. Rennie</p>
16:10	20 min coffee break	20 min coffee break	20 min coffee break
16:30	<p>Detection and analysis of coherent flow structures in a depth-limited flow over a gravel surface Richard J. Hardy, Timothy I. Marjoribanks, James L. Best, Kenneth T. Christensen, Daniel R. Parsons and Ricardo Mejia-Alvarez</p>	<p>Mapping coherent structures responsible for heat exchange between land-surfaces and atmosphere using time-sequential thermography Andreas Christen, Anirban Garai, Jan Kleissl, Fred Meier, Dieter Scherer, Roland Vogt and James Voogt</p>	<p>Sediment resuspension and bed morphology in highly turbulent flows Blair A. Johnson and Edwin A. Cowen</p>
16:45	<p>Turbulence structure and sand transport over gravel and cobble beds in laboratory flumes Daniel G. Wren, Roger A. Kuhnle, Eddy J. Langendoen and Corrado Pellachini</p>	<p>Coherent structure and wind gust in the urban canopy Fei Hu, Lihong Quan, Xueling Cheng and Lei Liu</p>	<p>Lobe and cleft structures in the Merrimack River plume front: Detailed measurements of a geophysical-scale gravity current Alexander R. Horner-Devine and C. Chris Chickadel</p>

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17:00	Flow fields and coherent structures associated with superimposed and amalgamating bedforms Jim Best	On the structure of wall turbulence in the thermally neutral atmospheric surface layer Michele Guala, Meredith Metzger and Beverley J. McKeon	Stratification effects on turbidity currents Mariano I. Cantero, Mrugesh Shringarpure, Hernán F. Furci, Jorge D. Abad, S. Balachandar and Gary Parker
17:15	Bedload transport and turbulent structure through emergent vegetation Elowyn M. Yager and Mark W. Schmeckle	Influences of surface geometry to the coherent turbulence structures Hiroshi Takimoto, Ayumu Sato, Takenobu Michioka, Atsushi Inagaki and Manabu Kanda	Are there coherent flow structures in lava flows? Gordon E. Grant and Katharine V. Cashman
17:30		SPIV analysis of coherent structures in a vegetation canopy model flow Tony Ruiz and Laurent Perret	
17:45		Wind tunnel measurements of spatial and temporal surface shear stress variations in live plant canopies and in rigid cube arrays Benjamin Walter, Christof Gromke, Katherine Leonard and Michael Lehning	
18:30	Dinner (Diamond Alumni Center)	Dinner (Diamond Alumni Center)	No Catered Dinner. See Jeremy Venditti to join a group reservations at Club Ilja
Poster	Coherent structures in suspended sediment-laden unsteady open-channel flows Fereshteh Bagherimiyab and Ulrich Lemmin	Turbulent quadrant events and sand transport responses over a foredune, PEI National Park, Canada Connie Chapman, Ian J. Walker, Patrick A. Hesp, Bernard O. Bauer and Robin G.D. Davidson-Arnott	A field study of turbulent flow structure above bar-pool-riffle units, Rouge River, Toronto, Ontario Josh Arnett and André Robert
Poster	Reattached wall jets and soil erosion dynamics in upland concentrated flows Sean J. Bennett	Stochastic modeling the effect of wind gust on dust entrainment during dust storm Xueling Cheng, Fei Hu and Lei Liu	Coherent structures and vortex dynamics in a stratified and rotating shear layer with horizontal shear Eric Arobone, Alden King, Scott Baden and Sutanu Sarkar
Poster	The dynamics of coherent flow structures within the pore spaces of a permeable bed Gianluca Blois, Greg Sambrook Smith, Jim Best and Richard Hardy	Large eddy simulation of coherent structures in an experimental street canyon wind channel Vladimir Fuka and Josef Brechler	The fluid dynamics of transitional flows containing suspended clays Jaco Baas, James Best and Jeffrey Peakall
Poster	Investigation of bed load sediment pulse sources and frequencies using spectral and wavelet analysis. John S. Boyd and Elowyn M. Yager	Effect of roll vortices on surface temperature and heat flux in convective boundary layer Anirban Garai and Jan Kleissl	Linking turbulence with sediment transport as bedload during a flood Laurence C. Desrochers and André G. Roy
Poster	A field study of coherent flow structures over low angle dunes: Fraser Estuary, British Columbia Ryan W. Bradley, Megan L. Hendershot, Jeremy G. Venditti, Ray A. Kostaschuk, Mead A. Allison, and Mike Church	Proper orthogonal decomposition of velocity and vorticity fields measured in turbulent flow above a complex terrain Radka Kellnerova, Libor Kukacka, Vaclav Uruba, Klara Jurcakova and Zbynek Janour	Formation of turbidity clouds in tidal currents, Elbe River, Germany Eva Kwohl, Christian Winter, Christian Maushake
Poster	Study of coherent structure over the rough bed in rectangular open channel Seyed Hossein Mohajeri, Akbar Safarzadeh Gondishmen and Seyed Ali Akbar Salehi Neyshabouri	Coherent structures and the dissimilarity of turbulent transport of momentum and scalars in the unstable atmospheric surface layer Dan Li and Elie Bou-Zeid	Flow and sediment dynamics of continuous turbidity currents in Lillooet Lake, British Columbia Amy Mencil and Ray Kostaschuk

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Poster	Turbulence generated due to bed roughness in rivers simulated through flume experiments B.S. Mazumder	Coherent structure of self-organized wind gust Lei Liu, Fei Hu and Xueling Cheng	Riffle-pool hydrodynamics and coherent flow structures: The influence of pool and riffle length Lana M. Obach, Bruce J. MacVicar and Jim Best
Poster	Fluvial obstacle marks generated in a laboratory flume and their implications to current crescents B. S. Mazumder and H. Maity	Non-uniform, gradually varied flow and bed-material transport in the backwater segment of the lower Mississippi River Jeffrey A. Nittrouer, Michael Lamb, John Shaw and David Mohrig	Mixing dynamics and coherent flow structures at the junction of two large rivers: Rio Parana' and Rio Paraguay, Argentina D.R. Parsons, S.N. Lane, J.L. Best, O. Orfeo, R.A. Kostaschuk and R.J. Hardy
Poster	Distinguishing bed-load and bed-material-load fluxes with repeat bathymetric data Brandon McElroy and David Abraham	Spatial and temporal variability of reach-scale morphodynamics in the lower Mississippi River Michael T. Ramirez, Mead A. Allison and Daniel D. Duncan	Flow and sediment dynamics in an unstable bifurcation: a field example of the Loire River N. Claude, S. Rodrigues, J-G. Br��h��ret, P. Jug�� and V. Bustillo
Poster	Measurement and analysis of coherent flow structures over sand dunes in the Missouri River, by means of an acoustic Doppler current profiler and a multi-beam echo sounder Kevin A. Oberg, Justin A. Boldt, James L. Best and Daniel R. Parsons	Modeling of overbank flow structures in meandering channels Ponnambalam Rameshwaran and Koji Shiono	Numerical modeling of wave-current interaction using smoothed particle hydrodynamics method Hassan Ali Sepiani and Mohammad Javad Ketabdari
Poster	Large-eddy simulation of the flow over two-dimensional river dunes Mohammad Omidyeganeh and Ugo Piomell	Effect of cluster spatial interaction and coactions on a turbulent flow field in a gravel river bed Lu Tan and Joanna Crowe Curran	Impact of flow stage on secondary flows and suspended sediment transport in a large river Ricardo N. Szupiany, Phil J. Ashworth, Mario L. Amsler, Jim L. Best, Rich J. Hardy, Andrew P. Nicholas, Oscar Orfeo, Dan R. Parsons and Steve D. Sandbach
Poster	Study of bedform-generated convective instability in sediment laden flows Dragana Petrovic, Michel Verbanck and Nicolas Huybrecht	Flow intensity and structure around dense streambank vegetation Desiree Tullos, Nicole Czarnomski and Robert E. Thomas	Similarity scaling of turbulence spectra and cospectra in a shallow tidal flow Ryan K. Walter, Nicholas J. Nidzieko and Stephen G. Monismith
Poster	Large-scale turbulent structures in a reach of the Hudson River Estuary Tuy N. M. Phan, John C. Wells, William D. Kirkey, Mohammad S. Islam and James S. Bonner	Multi-scale patterns of turbulent flow in hydraulic river habitats: towards an effective and ecologically relevant classification of physical biotopes Martin A. Wilkes, Ian. P. Maddock, Fleur Visser and Michael C. Acreman	Coherent flow structure and morphodynamics of chute cutoffs on a large meandering river Jessica Zinger, Bruce Rhoads and Jim Best
Poster	Coherent flow structures within a very large river revealed through the application of stream-ribbons S.D. Sandbach, R.J. Hardy, S.N. Lane, M.L. Amsler, P.J. Ashworth, J.L. Best, A.P. Nicholas, O. Orfeo, D.R. Parsons, A.J.H. Reesink, G.H. Sambrook-Smith and R.N. Szupiany		