UW-TU:AOS Workshop   AOS-Fall 2017 Schedule

At Petersen’s room in Allen Library, University of Washington

Nov 15 (W), 2017
2:00-3:30      Poster preparation
3:30-5:30      Poster Session

Nov 16 (Th), 2017

**Thrust-1: Next Generation Airplanes: Computational and Experimental Fluid Dynamics** (150 min)

**Moderator:** Soshi Kawai (TU)

**Opening Remarks (3 min):** Antonino Ferrante (UW)

8:00-8:25      Randall J. LeVeque (UW)
  Finite volume methods with adaptive mesh refinement for wave propagation problems

8:25-8:50      Shigeru Obayashi (TU)
  Optimization and data assimilation for aerospace engineering design

8:50-9:15      Antonino Ferrante (UW)
  Fast DNS of multiphase and wall-bounded turbulent flows

9:15-9:40      Soshi Kawai (TU)
  High-order accurate numerical methods and physical modeling for compressible turbulent flows

9:40-10:05     Dana Dabiri (UW)
  Design & implementation of a 3D-PTV system

10:05-10:30    Taku Nonomura (TU)
  Optical measurement, dynamic wind-tunnel testing and flow control technologies in aerospace engineering

**Thrust-2: Space, Robotics and International Policy** (150 min)

**Moderator:** Kristi Morgansen (UW) and Kazuya Yoshida (TU)

11:00-11:15    Kristi Morgansen (UW) and Kazuya Yoshida (TU) Opening Remarks

11:15-11:40    Saadia Pekkanen (UW)
  International space policy, overview of key issues such as space debris

11:40-12:00    Kazuya Yoshida (TU)
  Space robotics research activities at Tohoku University

12:00-12:20    Behcet Acikmee (UW)
  Autonomous precision guidance and control

12:20-12:40    Mitsuhiro Hayashibe (TU)
  Neuro robotics
Thrust-1: Next Generation Airplanes: Composite Materials & Systems (185 min)
Moderator: Tomonaga Okabe (TU)
Opening Remarks (2 min): Anthony Waas (UW)
14:30-14:50 Steven L. Brunton (UW)
Predictive Shimming: Advanced Automated Gap Filling with Data Science
14:50-15:10 N. Takeda and S. Minauchi (TU)
Crack Arresting in CFRP Bonded Joint Structures with Interlocked Fiber Feature
15:10-15:30 A. M. Waas, Lin and Abe (UW)
Modeling Impact Damage in Laminated Polymer Composites
15:30-15:50 Dwayne Arola, Luiz Bertassoni and Marco Salviato (UW)
Bioinspired composites for damage tolerance: design and manufacturing of "first-generation" systems
15:50-16:00 Break
16:00-16:20 Marco Salviato, Yang J. and Tuttle M. (UW)
Characterization and Computational Modeling of the Fracturing Behavior of Discontinuous Fiber Composite Structures
16:20-16:40 N. Odagiri (Toray)
Toray’s Composite Business in US
16:40-17:00 Davidson, A. M. Waas and N. Arai (UW)
Effects of Defects in AFP Structure Performance
17:00-17:20 N. Kishimoto and T. Okabe (TU)
An automated calculation of transition states for epoxy resins: Toward GRRM/MC/MD macromolecular dynamics simulation
17:20-17:35 A. Shinoda, R. Matsuzaki (TU)
Tow-steered composites by curved laminating using AFP technology
Nov 17(F), 2017

**Thrust-4  IFS-Interdisciplinary Research Collaboration** (150 min)

**Moderator:** Fumio Ohuchi (UW)

8:00-8:10 Opening Remarks: Shigeru Obayashi (TU)

8:10-8:30 Bruce Hinds (UW)  
*Flow batteries based on membrane/electrodes as a local power source*

8:30-8:50 Takashi Tokumasu (TU)  
*Large scale molecular dynamics simulations for the transport phenomena of reaction materials in fuel cell*

8:50-9:10 Christine Luscombe (UW)  
*Polymers and their hybrids for use in organic electronics*

9:10-9:30 Hidemasa Takana (TU)  
*Fundamental characteristics of ionic liquid electrospray and its application to CO2 absorption technology*

9:30-9:50 Peter Pauzauskie (UW)  
*Engineering multifunctional optoelectronic point-defects in nanoscale ceramic material*

9:50-10:10 Atsuki Komiya (TU)  
*Enhancement of CO2 absorption through the understanding of heat and mass transfer mechanism at gas-liquid interface*

10:10-10:30 Xiasong Li (UW)  
*Computational methods for materials research*


**Thrust-3  Natural Disaster & Hazard**

**Moderator:** Masahiro Yamaguchi (TU)

11:00-11:10 Opening Remarks: Yoichiro Yamada (Consulate General of Japan)

11:10-11:25 Marc Eberhard (UW)  
*Overview of UW Natural Hazards Research*

11:25-11:40 Anna Suzuki (TU)  
*Experimental and numerical studies on fluid motions around fissured rock mass*

11:40-11:55 Brisa Davis (UW)  
*Adjoint methods for adaptive refinement of tsunami propagation*

11:55-12:10 Ikkoh Tachibana (TU)  
*Two-scale characterization of seepage flow with micro-scale direct numerical simulation*

12:10-12:25 Reika Nomura (TU)  
*Multiscale evaluation of disaster mitigation effect of coastal forest.*
12:25-13:30  Lunch

13:30-13:45  Xinsheng Qin (UW)  
2D and 3D Modeling of Tsunami Inundation: a Case Study of Seaside, Oregon

13:45-14:00  Kenta Sato (TU)  
The lattice Boltzmann modeling for efficient three-dimensional free surface simulation of tsunami

14:00-14:15  Erin Wirth (UW/USGS)  
3-D Simulations of Magnitude 9 Earthquakes on the Cascadia Megathrust

14:15-14:30  Kenjiro Terada (TU)  
Advanced failure simulations and multiscale strength evaluation method

14:30-14:50  break

14:50-15:05  Alex Grant (UW)  
Earthquake induced landslides in subduction-zone events: insights from the Tohoku, Japan inventory and implications for the Pacific Northwest

15:05-15:20  Shuji Moriguchi (TU)  
Probabilistic approach for disaster-risk evaluation: extensive use of rock fall and tsunami simulations

15:20-15:35  David Schmidt (UW)  
Tsunami and Earthquake Early Warning for the Cascadia Subduction Zone

15:35-15:50  Shunichi Koshimura (TU)  
Real-time tsunami inundation and damage forecasting

15:50-16:10  break

16:10-16:25  Fumiyasu Makinoshima (TU)  
Tsunami evacuation planning by HPC enhanced agent-based simulation

16:25-16:40  Krishnendu Shekhar (UW)  
Evaluation of debris-induced impact forces using MPM simulations and flume experiments

16:40-16:55  Steve Kramer (UW)  
Earthquake-induced soil liquefaction, including duration effects and the potential impact of long-duration and subduction-zone events

16:55-17:10  Erick Mas (TU)  
Agent based models for tsunami evacuation and disaster response simulations

17:10-17:30  Closing discussion
17:45  Bus departure

18:30  Reception at Consulate General of Japan Official Residence (in Queen Anne)

23 Highland Dr., Seattle, WA 98109