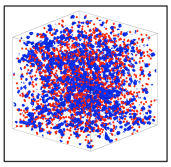
WORKSHOP ON PHYSICS AND MODELING OF DISPERSED MULTIPHASE FLOWS

Stanford University
October 22-23



Day 1, October 22

0730-0800 Breakfast

0800-0830 Welcome
Ali Mani, *Stanford University*

0830-0900 Overview of Florida PSAAP2 Center
S. Balachandar, *University of Florida*

0900-0930 Overview of Utah PSAAP2 Center
Phil Smith, *University of Utah*

0930-1000 Overview of Stanford PSAAP2 Center
Ali Mani, *Stanford University*

1000-1030 Coffee Break

Particle Flows with Heat Transfer

1030-1100 "Modeling drag and heat-transfer from heated particles"
Sanjiva Lele, *Stanford University*

1100-1130 "Multiphase use-cases within the abnormal/thermal environment"
Stefan Domino, *Sandia National Laboratory*

1130-1200 "Measurements of fluctuating temperature and transmission in a radiatively-heated particle-laden turbulent duct flow"
Ji Hoon Kim, *Stanford University*

1200-1330 Lunch

Compressibility Effects in Particle-Laden Flows

1330-1400 "Shock-driven microparticle drag measurements"
Katherine Prestridge, *Los Alamos National Laboratory*

1400-1430 "Flow unsteadiness in shock-particle cloud interactions"
Jonathan Regele, *Los Alamos National Laboratory*

1430-1500 "Shock-particle interaction and explosive dispersal of particles"
Fred Ouellet / Rahul Koneru, *University of Florida*

1500-1530 Coffee Break

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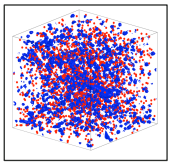

1530-1600 "On lift mechanisms for particle-shock interactions in near-wall proximity"
Fady Najjar, *Lawrence Livermore National Laboratory*

1600-1630 "Sound and turbulence modulation by particles in high-speed flows"
Jesse Capecelatro, *University of Michigan*

Point-Particle Panel
1630-1730 Georges Akiki, S. Balachandar, Jessie Capecelatro, Jeremy Horwitz

1830-2100 Dinner, Stanford Faculty Club

Day 2, October 23

0730-0800 Breakfast

High-fidelity and Reduced-order Modeling of Particle-Laden Flows
0800-0830 "Towards Euler-Lagrange simulations with fully resolved physics"
Chandler Moore, *University of Florida*

0830-0900 "An unstructured overset methodology for particle-resolved DNS"
Krishnan Mahesh, *University of Minnesota*

0900-0930 "Self-induced velocity and thermal corrections in Euler-Lagrange simulations"
Kai Liu, *University of Florida*

0930-1000 "An update on verifiable point-particle methods: computational particles"
Jeremy Horwitz, *Stanford University*

1000-1030 Coffee Break

1030-1100 "Deterministic collisions with a reduced number of computational particles"
Perry Johnson, *Stanford University*

1100-1130 "Subgrid-scale modeling for preferential concentration of inertial particles in turbulence"
Maxime Bassenne, *Stanford University*

1130-1200 "A verifiable stochastic radiation transmission model for particle-laden turbulent flow"
Andrew Banko, *Stanford University*

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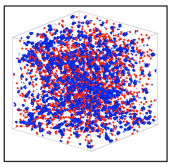

1200-1230 "A novel strategy for load-balanced exascale simulations of 4-way coupled Euler-Lagrange simulations"
David Zwick, *University of Florida*

1230-1330 Lunch

Particle-Laden Flows with Mass Transfer across Phases

1330-1400 "Gas turbine sand ingestion in austere environments"
John Spyropoulos, *Navair*

1400-1430 "Particulate deposition"
Phil Smith, *University of Utah*

1430-1500 "Modeling of ejecta particles in the FLAG continuum mechanics code"
Alan Harrison, *Los Alamos National Laboratory*

1500-1515 Coffee Break

1515-1545 "Three-phase model of pyrotechnic explosions"
Allen Kuhl, *Lawrence Livermore National Laboratory*

1545-1615 "Explosive dispersal of particles: validation experiments"
Kyle Hughes, *Los Alamos National Laboratory*

1615-1630 Closing remarks
Ali Mani, *Stanford University*

1630 **Adjourn**