

IUTAM Symposium on Turbulent Structure and Particles-Turbulence Interaction: July 2023

Location: Yifu Science Museum, Lanzhou University

Programme

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| July 7 | Registration | | |
| | 08:00-22:30 | <i>Wyndham LanZhou HaiYue Hotel</i> | |
| July 8 | | | |
| | 08:30-08:50 | Opening Ceremony (Presider: Ning Huang) | |
| | 08:50-09:20 | <i>Group photo & Coffee break</i> | |
| | Session 1 (Presider: Lian Shen) | | |
| | 09:20-10:00 | S. Balachandar | Turbulent structure of super, sub, and trans-critical turbidity currents and turbulent-sediment Interaction at the Bed |
| | 10:00-10:40 | Zhaosheng Yu | Turbulence modulation by heavy finite-size particles in vertical channel flows and development of two-fluid models from interface-resolved simulations |
| | 10:40-11:20 | Rodney O Fox | A Turbulence model for compressible disperse multiphase flows |
| | 11:20-12:00 | Lianping Wang | Simulation and analysis of turbulent flows laden with spherical and non-spherical particles |

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| July 8 | 12:00-14:00 | <i>Lunch Time</i> | |
| | Session 2 (Presider: Chao Sun) | | |
| | 14:00-14:40 | Alfredo Soldati | Dynamics of anisotropic particles in turbulence |
| | 14:40-15:20 | Xiaojing Zheng | Evolution of structure characteristics during the non-stationary processes in high-Reynolds-number particle-laden wall-bounded turbulence |
| | 15:20-16:00 | Chunxiao Xu | Hierarchical structures and particle transport in wall turbulence |
| | 16:00-16:20 | <i>Coffee break</i> | |
| | Session 2 (Presider: Lianping Wang) | | |
| | 16:20-17:00 | Devaraj van der Meer (online) | A synthetic, scaling-law approach to liquid impact |
| | 17:00-17:40 | David Richter (online) | Particle-turbulence interactions in high-Re flows: Can small particles influence large-scale motions? |
| | 17:40-18:20 | Cristian Marchioli (online) | From DNS to LES of turbulent dispersed flows: Modelling subgrid effects on particle dispersion |
| | 18:20-19:00 | Gaetano Sardina (online) | Particle-turbulence interactions in atmospheric warm clouds |
| 19:00-21:00 | <i>Dinner Time</i> | | |

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| July 9 | Session 3 (Presider: Rodney O. Fox) | | |
| | 08:30-09:10 | Lian Shen | Direct numerical simulation and analysis of bubbly flow in breaking waves |
| | 09:10-09:50 | Francesco Picano | Modeling and simulation of droplet evaporation in turbulent sprays with application to respiratory disease transmission |
| | 09:50-10:30 | Jiarong Hong | Decoding particle settling dynamics with snow-powered field research |
| | 10:30-10:40 | <i>Coffee break</i> | |
| | Session 3 (Presider: Alfredo Soldati) | | |
| | 10:40-11:20 | Eckart Meiburg | Cohesive particles in turbulence |
| | 11:20-12:00 | Keqing Xia | Vortices as particles in rapidly rotating turbulent flows |
| | 12:00-12:40 | René van Hout | Particle-turbulence interactions: from spheres to fibers |
| | 12:40-14:00 | <i>Lunch Time</i> | |
| | Session 4 (Presider: Keqing Xia) | | |
| | 14:00-14:40 | Jesse Capecelatro | Towards robust turbulence models for strongly-coupled gas-particle flows |
| | 14:40-15:20 | Chao Sun | Global and local statistics in turbulent emulsions |
| 15:20-16:00 | Rui Ni | The deposition and clustering dynamics of charged inertial particles in turbulent channel flows | |

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| July 9 | 16:00-16:10 | <i>Coffee break</i> | |
| | Session 4 (Presider: Ning Huang) | | |
| | 16:10-16:50 | Yali Tang | Coarse-grained Euler-Lagrange simulations of polydisperse reactive particulate flows |
| | 16:50-17:30 | Susumu Goto | The condition and rate of attenuation of turbulent kinetic energy due to solid spherical particles |
| | 17:30-18:10 | Wei Ge | Multi-scale discrete simulation of particle-fluid Interactions |
| | 18:10-18:50 | Kun Luo | An improved direct-forcing immersed boundary method for modeling flow dynamics and heat transfer in gas-solid dense flow |
| | 18:50-20:00 | <i>Dinner Time</i> | |

Young scholar and PhD student Forum

Presider: Guodong Jin

July 10

08:30-08:50

Yucang Ruan

Effect of shear-induced lift on particle motion and turbulence modulation in fully developed compressible channel flow

08:50-09:10

Yantao Yang

Effects of momentum coupling in the turbulent convection driven by heat-releasing point particles

09:10-09:30

Chendong Shen

Numerical Study on Turbulent Diffusion of Weakly Inertial Particles under Large Temperature Difference

09:30-09:50

Ao Xu

Control the Migration of Self-propelling Particle in Thermal Turbulence via Reinforcement Learning Algorithm

09:50-10:10

Cheng Wang

Turbulent modulation of finite-size particles in Taylor-Couette flow

10:10-10:30

Hao Jiang

Distribution of Charged Particles in Turbulent Channel Flow

10:30-10:40

Coffee break

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| July 10 | Presider: Weixi Huang | | |
| | 10:40-11:00 | Huan Zhang | Local intermittency of electrified dust storms in the near-surface layer |
| | 11:00-11:20 | Jiangtao Tan | Artificial Neural Network Modeling Small-Scale Turbulence of Isotropic Turbulent Flows |
| | 11:20-11:40 | Xili Guo | Study of Heat Transport Characteristics of Particle-Laden in Vibration Driven Flows |
| | 11:40-12:00 | Jinghong Su | Drag modulation in two-phase Taylor-Couette flow with droplets |
| | 12:00-12:20 | Jiahui Hao | Rheology of granular flow of Platonic solid-shaped particles |
| | 12:20-12:40 | Liang-Bing Chen | Turbulent thermal convection driven by heat-releasing particles |
| | 12:40-13:40 | Lunch Time | |

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| July 10 | Presider: Yantao Yang | | |
| | 13:40-14:00 | Guo-Zhen Ma | Direct numerical simulation of turbulent channel flow over three-dimensional sinusoidal roughness |
| | 14:00-14:20 | Yihong Du | Sea Water Freezing Modes in a Natural Convection System |
| | 14:20-14:40 | Heng-Dong Xi | Effects of polymer additives on the turbulent/non-turbulent interface of turbulent water jet |
| | 14:40-15:00 | Ping Wang | Lift force acting on particles moving in the two-phase flow over sediment bed |
| | 15:00-15:20 | Yun Liu | Volumetric flow measurement of a displacement piston model for a β type Stirling engine |
| | 15:20-15:40 | Guohua Wang | Reynolds number effects in turbulent boundary layer |
| | 15:40-16:00 | Coffee break | |
| | Presider: Ping Wang | | |
| | 16:00-16:20 | Xiaoyan Ye | Nonlocal rheology of dense granular flow |
| | 16:20-16:40 | Yang Li | Numerical investigations of turbulent channel flows laden with confined oblate spheroids |
| | 16:40-17:00 | Zhen Jian | Air entrapment during drop impacting on a deep pool |

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| July 10 | Presider: Ping Wang | | |
| | 17:00-17:20 | Zhikai You | Turbulence induced vibration in particle detachment from a wall |
| | 17:20-17:40 | Zi-Mo Liao | GPU accelerated four-way coupled PP-DNS of compressible particle-laden wall turbulence |
| | 17:40-18:00 | Fei-Chi Zhang | Analysing and predicting streamwise velocity fluctuations in nonstationary atmospheric surface layers using the ARMA-GARCH Model |
| | 18:00-18:20 | Kai Peng | Direct numerical simulation of bubbly flows using repulsive force model |
| | 18:20-19:00 | Closing remark | |
| | 19:00-21:00 | Dinner Time | |