

Day-2, Monday, 25 May, 2015**S01-1 Flow Instability and Turbulence****Chairmen: Shuisheng He, Lixing Zhou****14:00-15:45 Room A**

- 14:00 S01024 **Experimental study of breakup of turbulent free-falling water jet**
Yiyi Ma, David Z. Zhu, G. Adriana Camino, Nallamuthu Rajaratnam
- 14:15 S01002 **The effects of heating on noise generation in subsonic transitional jets**
Zhenhua Wan, Haihua Yang, Xingchen Zhang, Dejun Sun
- 14:30 S01025 **Non-parallel-flow effect on compressible boundary layer in a flat plate**
Zhangfeng Huang, Xuesong Wu
- 14:45 S01027 **Effects of yaw angle on flow characteristics across an inclined circular cylinder**
Hui Liang, Shengyao Jiang, Riqiang Duan
- 15:00 S01030 **Experimental investigation on unsteadiness and its control of a laminar wing-plate junction flow**
J. H. Liu, K-S Choi, C. Y. Song
- 15:15 S01034 **Laboratory experiment on turbulent mixing and structure at a shear-free density interface in a stably stratified fluid**
John Z. Shi, Shuang Zhang
- 15:30 S01032 **Linear stability analysis of liquid metal film flow affected by spanwise magnetic field**
Chan Liu, Nianmei Zhang, Mingjiu Ni, Tianyu Qi

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S01-1 Flow Instability and Turbulence**Chairmen: Shuisheng He, Lixing Zhou****16:10-17:40 Room A**

- 16:10 S01003 **Transition of transient channel flow**
S. He, M. Seddighi, S. Gorji, A. Mathur
- 16:25 S01005 **Electric field enhances mixing in micro circular pipes**
Zijing Ding, Teck Neng Wong
- 16:40 S01035 **Triangle cylinder wake analysis based on wavelet and POD techniques**
Yan Zheng, Akira Rinoshika, Shun Fujimoto
- 16:55 S01007 **Transient growth of axisymmetric perturbations in co-rotating Taylor-Couette flow of a Bingham fluid**
Cheng Chen, Wei Zhang, Weiguo Zhang
- 17:10 S01011 **Instabilities of thermocapillary flows between counter-rotating disks under microgravity conditions**
Kaixin Hu, Meng He, Qisheng Chen
- 17:25 S01012 **Development of a planar free jet under periodic small amplitude actuation using synthetic jets**
Y. Xia, X. H. Liu, N. Gao

S02-1 Aerodynamics and Gas Dynamics**Chairmen: Zonglin Jiang, Zhengtong Xie****14:00-15:30 Room B**

- 14:00 S11038 **Free-stream turbulence effects on aerodynamics of long-span bridges**
S. J. Daniels, I. P. Castro, Z. T. Xie
- 14:15 S02002 **Numerical simulation on 6-DOF response of a missile under the rudder disturbance**
Qi Chen, Jianqiang Chen, Yufei Xie, Xianyu Yuan
- 14:30 S02008 **Quasi-periodic aerodynamic heating in blunt-fin induced shock wave/boundary layer interaction**
Yueqing Zhuang, Xiyun Lu
- 14:45 S02014 **General Reynolds analogy for blunt bodies in hypersonic flows**
Xingxing Chen, Zhihui Wang, Yongliang Yu
- 15:00 S02017 **Simulation of rain effects on aerodynamic performance of an airfoil**
Ruimin Zhang, Junbo Zhao, Hainian Li
- 15:15 S08016 **Improvement and application of computational method about collection efficiency on iced component surface**
Ruimin Zhang, Junbo Zhao, Hainian Li

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S02-1 Aerodynamics and Gas Dynamics**Chairmen: Zonglin Jiang, Zhengtong Xie****16:10-17:25 Room B**

- 16:10 S02001 **Hypersonic aeroelastic response prediction using CFD/CSD approach**
Jinan Lü, Li Guo, Zhanjun Chen, Ziqiang Liu
- 16:25 S02009 **Horseshoe vortex control using streamwise vortices**
M. Y. Younis, H. Zhang, X. G. Wu, R. W. Zhu, Zaka Muhammad
- 16:40 S02012 **A novel approach to uncover mechanisms of aerodynamic forces acting on a body in incompressible flows**
Yongliang Yu
- 16:55 S02020 **Aeroelastic stability analysis of compressor blades in high-low altitude**
Xiang Zhang, Xiuquan Huang, Hengming Zhang, Xuefeng Li
- 17:10 S03005 **A modified Navier-Stokes equations for incompressible fluid flow**
Shuangling Dong

S03-1 Hydrodynamics**Chairmen: Adrian Wing-Keung Law, Gang Wei****14:00-15:45 Room C**

- 14:00 S03006 **Wave interaction with porous vertical breakwater in two-layer fluid**
Menghua Zhu, Hua Huang, Jiemin Zhan, Lin Guo, Ruizhi Chen
- 14:15 S03022 **Wave-induced hydrodynamic responses of a finite elastic plate connected with an immersed structure**
Q. R. Meng, D. Q. Lu
- 14:30 S03030 **Unsteady characteristics of wave-induced sediment transport**
Yinjun Li, Jifu Zhou
- 14:45 S06001 **Natural convection in near shore waters subject to periodic thermal forcing**
Yadan Mao
- 15:00 S03040 **Simulation of flows through submerged vegetation patches using macroscopic turbulence models**
Zhiya Chen, C. W. Li, Jiemin Zhan
- 15:15 S03013 **An FEM-Level-set method for numerical simulation of potential flow with free surface**
Longfei Cong, Bin Teng
- 15:30 S03018 **On the interaction of two encapsulated bubbles subjected to a sound wave**
Yunqiao Liu, Zhaoxin Gong

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Session List

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S03-1 Hydrodynamics

Chairmen: Adrian Wing-Keung Law, Gang Wei

16:10-17:40 Room C

- 16:10 S03016 **Wave interactions with a porous and flexible cylinder**
Wei Su, Jiemin Zhan, Hua Huang
- 16:25 S03029 **An experimental study on the attenuation of surface waves due to a viscoelastic floating cover**
Zhengzhi Deng, Dharma Sree, Firdaus Prabowo, Adrian Wing-Keung Law, Hayley H. Shen
- 16:40 S03035 **Stability of the liquid film with noble gas flowing down inclined heated plate**
Youliang Cheng, Guoning Yang
- 16:55 S03038 **Study on the transient wave-blockage interaction in fluid piping systems**
H. F. Duan, P. J. Lee
- 17:10 S11052 **The effect of trimming and sinkage on the trimaran resistance calculation**
Rui Deng, Debo Huang, Guangli Zhou
- 17:25 S03034 **Two descriptions for many moving bodies through inviscid fluid**
R. Sun

MS2 Microscale Flows and Micro/Nano Fluidics**Chairmen: Yiyi Zuo, Guoqing Hu****13:30-15:50 Room D**

- 13:30 S09015 **Coalescence of emulsion droplets in AC electric field**
Invited *Zhou Liu, Faizi Hammad Ali, San To Chan, Ho Cheung Shum*
- 13:55 S09013 **Sorting cells in a fluid suspension by differentiating their surface free energies**
Invited *Yi Y. Zuo, Xinru Zhang, Xinxin Zhang*
- 14:20 S09002 **Rigidity regulated cellular uptake of nanoparticles**
Jiashu Sun
- 14:35 S09004 **Bubble dynamics in a microfluidic chamber under low-frequency actuation**
Xiaopeng Shang, Xiaoyang Huang, Chun Yang
- 14:50 S09005 **Induced pressure of power-law fluids electroosmotic flow in micro-diffuser at different angles**
Juan Duan, Qingyong Zhu
- 15:05 S09007 **Sheathless separation of particles and cells by viscoelastic effects in straight rectangular microchannels**
Chao Liu, Chundong Xue, Guoqing Hu
- 15:20 S09008 **On the successful encapsulation of water droplets into oil droplets**
Xiaodong Chen, Yingnan Sun, Yude Yu, Guoqing Hu
- 15:35 S09006 **Numerical modeling of a water-in-oil emulsion droplet behavior under the microwave impact**
Yulia I. Fatkhullina, Ayrat A. Musin, Liana A. Kovaleva

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MS2 Microscale Flows and Micro/Nano Fluidics**Chairmen: Yiyi Zuo, Guoqing Hu****16:10-17:50 Room D**

- 16:10 S09016 **Electrokinetic microfluidics and nanofluidics**
Invited *Dongqing Li*
- 16:35 S09011 **Investigation of gas local effective viscosity in nano-scale channels**
Shuangshuang Luo, Fubing Bao, Limin Qiu
- 16:50 S09012 **Effect of concentration-dependent disjoining pressure on vertical draining flow**
Xuemin Ye, Yimei Qu, Chunxi Li
- 17:05 S09014 **Modeling study on structure and dynamics of room-temperature ionic liquids at fluid-solid interfaces in supercapacitors**
Wei Zhao, Guang Feng
- 17:20 S11059 **Numerical study of mixed electroosmotic pressure driven flow of power-law fluids in T-shaped microchannels**
Yijie Zhuang, Qingyong Zhu
- 17:35 S09017 **The interaction of viscous forces and elasticity of cancer cells in microfluidic filtration chips**
Yi-Kuen Lee, Cong Zhao, Dayu Liu, Chun Liang

S11-1 Computational Fluid Dynamics**Chairmen: Riqiang Duan, Xin He****14:00-15:45 Room E**

- 14:00 S11039 **A new parallel algorithm of direct simulation Monte Carlo method**
Fei Huang, Pengfei Li, Wenlong Mei, Xiaoli Cheng
- 14:15 S11043 **Discussion of numerical simulation about transition flow around the double compression surface hypersonic inlet**
Qing Shang, Guoliang Li, Lin Chen
- 14:30 S11061 **Effect of gap flow on torque for blades in a rim driven thruster without axial pressure gradient**
Qingming Cao
- 14:45 S11017 **A smoothed particle hydrodynamics method for modelling soil-water interaction**
Qiang Wu, Yi An, Qingquan Liu
- 15:00 S11004 **Influence of attack angle on the three-dimensional asymmetric dynamic process of sabot discard**
Zhengui Huang, Zhihua Chen
- 15:15 S11048 **A 2D+t ISPH model to simulate the wave pattern generated by fast ships**
Kangning Niu, Xing Zheng, Shanqin Jin, Ye Miao
- 15:30 S11064 **An improved momentum-exchanged immersed boundary-based lattice Boltzmann method for incompressible viscous thermal flows**
Mufeng Chen, Xiaodong Niu

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S11-1 Computational Fluid Dynamics**Chairmen: Riqiang Duan, Xin He****16:10-18:10 Room E**

- 16:10 S11007 **Large-eddy simulation of underexpanded sonic coaxial jets**
Haitao Shi, Xiyun Lu
- 16:25 S11023 **Numerical study of a starting buoyant jet from a channel**
Manman Qiao, Feng Xu
- 16:40 S11029 **Numerical study on homogeneous condensation in a vortex**
Yun Cao, Xisheng Luo
- 16:55 S11045 **Incompressible SPH based on Ranine source solution for water wave impact simulation**
Xing Zheng, Zhenhong Hu, Qingwei Ma, Wenyang Duan
- 17:10 S11046 **A new boundary treatment method for smoothed particle hydrodynamics**
Shanqin Jin, Xing Zheng, Wenyang Duan, Kangning Niu
- 17:25 S11047 **Simulate wave body interaction based on the incompressible SPH method**
Xipeng Lü, Xing Zheng, Ningbo Zhang, Kangning Niu
- 17:40 S11037 **Numerical study of chemical non-equilibrium viscous flow behind the reflected shock in shock tube using a high-order scheme**
Song Chen, Quanhua Sun
- 17:55 S11030 **Numerical simulation of convective-radiative coupled heat transfer performance for high altitude airships**
Rong Ma, Wei Yao, Zhenxun Gao, Haichao Xue

S05 Biofluid Mechanics**Chairmen: Dalin Tang, Bin Chen****14:00-16:00 Room F**

- 14:00 S05001 **Dynamics of a nonspherical capsule in general flow**
Huilin Ye, Haibo Huang, Xiyun Lu
- 14:15 S05002 **Vorticity dynamics and control of the three dimensional self-propelled travelling wave wall in ground effect**
Zhiqiang Xin, Chuijie Wu
- 14:30 S05004 **Self-propulsion of a flexible plunging foil near a solid wall**
Longzhen Dai, Guowei He, Xing Zhang
- 14:45 S05006 **IVUS-based fluid-structure interaction models for novel plaque vulnerability indices: A study in patients with coronary artery disease**
Liang Wang, Akiko Meahara, Chun Yang, Jie Zheng, Richard Bach, David Muccigrosso, Gary Mintz, Dalin Tang
- 15:00 S05007 **Fluid-structure interaction modeling approach to develop right ventricle pulmonary valve replacement surgical procedures with a contracting actuator and improve ventricle ejection fraction**
Chun Yang, Dalin Tang, Nikolay Vasilyev, Rahul Rathod, Tal Geva, Pedro del Nido
- 15:15 S05008 **Using 3D echo-based modeling to quantify in vivo ventricle material properties: A multi-patient study**
Longling Fan, Jing Yao, Chun Yang, Di Xu, Dalin Tang
- 15:30 S05010 **A three-dimensional numerical analysis of platelet flow in a carotid artery**
Guojie Li, Bin Chen
- 15:45 S05009 **Using 2D in vivo IVUS-based models for human coronary plaque progression analysis and comparison with 3D fluid-structure interaction models: A multi-patient study**
Hongjian Wang, Liang Wang, Jie Zheng, Jian Zhu, Akiko Maehara, Chun Yang, Richard Bach, David Muccigrosso, Gary Mintz, Dalin Tang

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S08-1 Multiphase Flows, Non-Newtonian Flows and Flows in Porous Media**Chairmen: Xiaohong Wang, Xiaolong Yin****16:10-17:40 Room F**

- 16:10 S08022 **Numerical simulation of adhesion and scale process of catalyst particles on the flue gas turbine blades surface**
Shuaifu Chen, Jianjun Wang, Youhai Jin, Xiaowei Gao, Yuduo Li, Kunshan Xu
- 16:25 S08023 **Investigation on axisymmetrical explosive dispersal of a cylindrical liquid volume**
Xiaoxia Lu, Lei Li, Jinsheng Wang, Xiaofang Yan, Shoutian Zhao, Chao Han
- 16:40 S08026 **Three dimensional numerical simulation of melt filling process in mold cavity with insets**
Qiang Li
- 16:55 S08027 **Simulation of the spread of oil slicks by a multiphase particle method**
Guangtao Duan, Bin Chen
- 17:10 S08018 **Numerical computation for nonlinear unsteady percolation of shale gas and production forecasting**
Jiaxuan Liu, Xinchun Shang, Weiyao Zhu
- 17:25 S08035 **Fracture network numerical well test model based on the discrete-fracture model**
Yizhao Wan, Yuwu Liu, Weiping Ouyang, Congcong Niu, Guofeng Han, Wenchao Liu

Day-3, Tuesday, 26 May, 2015**S01-2 Flow Instability and Turbulence****Chairmen: Hong Yan, Guowei He****14:00-15:45 Room A**

- 14:00 S01006 **Numerical simulation of supersonic shear layer with plasma actuator**
Hong Yan, Ke Lin
- 14:15 S01009 **Sound generation by interaction of T-S waves with steady local suction**
Ming Dong, Xuesong Wu
- 14:30 S01019 **Acoustic receptivity of second mode T-S wave induced by wall roughness in supersonic boundary layers**
Yinhui Liu, Ming Dong
- 14:45 S01020 **Simulations and stability study of the flow around a cylinder in infinite domain at low Reynolds**
Huashu Dou, Anqing Ben
- 15:00 S11014 **The non-reflecting characteristic boundary conditions for compressible Rayleigh-Taylor flows under general acceleration histories**
Yousheng Zhang, Zhiwei He, Xinliang Li, Baolin Tian
- 15:15 S08024 **DNS of differential thermal and mass diffusions in free turbulent shear flows**
Kun Zhou, Ming Xiao, Xiao Jiang
- 15:30 S01029 **Direct numerical simulation of elongated body wake instability**
Xinming Wu, Weipeng Li

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S01-2 Flow Instability and Turbulence**Chairmen: Hong Yan, Guowei He****16:10-17:40 Room A**

- 16:10 S01010 **Large-eddy simulation of shock wave impinging on a backward facing step**
Weipeng Li
- 16:25 S01016 **The effects of temperature on the sound generated by vortex pairing in an axisymmetric subsonic jet**
Haihua Yang, Zhenhua Wan, Lin Zhou, Dejun Sun
- 16:40 S01023 **Investigations on the feature of turbulent viscosity associated with vortex shedding**
Qian Li, Q. W. Ma, S. Yan
- 16:55 S01028 **Large eddy simulation with sub-grid stress determined by molecular simulation and its applications for turbulent channel flow**
D. D. Zeng, F. Q. Zhong, J. Fan
- 17:10 S01013 **Response of turbulent fluctuations to the periodic perturbations in a flow over a backward facing step**
Z. Y. Li, X. H. Liu, N. Gao
- 17:25 S01031 **Regularization of wall-wall turbulence by discrete roughness element**
C. Pan, N. Zhou, J. J. Wang

S02-2 Aerodynamics and Gas Dynamics**Chairmen: Weipeng Li, Feng Xu****14:00-15:30 Room B**

- 14:00 S02015 **Large eddy simulation of base drag reduction with jet boat-tail passive flow control**
Yunchao Yang, Gecheng Zha
- 14:15 S11005 **Aerodynamic investigation of RAE2822 airfoil and flows in ground effect**
Shaowei Li, Danjie Zhou, Yuanjing Zhang, Qiulin Qu, Linjing Ma
- 14:30 S11008 **Analysis on aerodynamic characteristics of the Mars Science Laboratory**
Bojiao Wu, Xianxu Yuan, Yufei Xie, Qi Chen
- 14:45 S11019 **Gradient-based aerothermodynamic optimization of a hypersonic wing profile**
Chenchao Xia, Weifang Chen
- 15:00 S12001 **Turbulence-flame interaction in an evaporating/combusting droplet**
Lixing Zhou, Ke Li
- 15:15 S12002 **Oblique shock to detonation transition in hydrogen-air mixtures**
Honghui Teng, Tao Wang, Zonglin Jiang

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S02-2 Aerodynamics and Gas Dynamics**Chairmen: Weipeng Li, Feng Xu****16:10-17:25 Room B**

- 16:10 S11006 **Numerical investigation of the unsteady behavior of a hypersonic inlet under throttling**
Peizhao Sun, Xiyun Lu
- 16:25 S02007 **Static instability of Mars Pathfinder entering Martian atmosphere at small angle of attack**
Junming Lyu, Changchang Liu, Wenbo Miao, Xiaoli Cheng
- 16:40 S11032 **Large eddy simulation of compressibility effects on supersonic boundary layer transition and turbulence**
S. Z. Wang, J. M. Lei, H. P. Zhen, C. H. Lee
- 16:55 S11021 **Numerical simulation on the shock wave/boundary layer interaction with heating/cooling effect**
Duo Zhang, Weidong Liu, Bo Wang, Yi Su
- 17:10 S11010 **The application of expansion wave concept in the design process of supersonic isentropic inlet**
Yuanguang Wang, Shuo Zhou, Jingtao Guo

S03-2 Hydrodynamics**Chairmen: Kai Yan, Benlong Wang****14:00-15:45 Room C**

- 14:00 S03002 **A method of cavitation flow for axisymmetric body**
Guoliang Li, Qing Shang, Xiangjiang Yuan
- 14:15 S03008 **Three-dimensional instability in the propulsive wake of a flapping foil**
Jian Deng, Xueming Shao
- 14:30 S03009 **Numerical investigation to the surface reversal flow generated by modulation instability**
Zhaobing Jiang
- 14:45 S03010 **The motion of small bubble in the ideal vortex flow**
Linya Chen, Lingxin Zhang, Xueming Shao
- 15:00 S03011 **Landslide-generated impulse waves in deep V channel: Runup and near field characteristics**
Chuanqi Shi, Yi An, Qingquan Liu
- 15:15 S03019 **A seakeeping analysis method for T-craft**
Zhiqun Guo, Qingwei Ma, Hanbing Sun
- 15:30 S03023 **Fluid flow in a cavity driven by an oscillating lid by an improved incompressible SPH**
Zhenhong Hu, Xing Zheng

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S03-2 Hydrodynamics**Chairmen: Kai Yan, Benlong Wang****16:10-17:55 Room C**

- 16:10 S03014 **Numerical examination of coupling effect of roll motion and fluid resonance between twin floating barges in proximity**
Shu Li, Bin Teng, Lin Lyu
- 16:25 S03015 **Water tunnel experimental investigation on the drag reduction characteristics of surface coating wall**
Yan Yao, Jinling Luo, Kun Zhu
- 16:40 S03017 **Axial and transverse coupled vibration characteristics of deep-water riser with internal flow**
Liang Zhang, Han Wu, Yang Yu, Xiaohui Zeng, Jifu Zhou, Binqi Xie, Min Shi, Shanlin Huang
- 16:55 S03028 **Modeling of the propulsion hydrodynamics for the water strider locomotion on water surface**
Jun Zheng, Kaiping Yu, Jiazhong Zhang, Junfeng Wang, Changfeng Li, Weiqi Chen
- 17:10 S03031 **Analyses of wave loads on surface piercing vertical cylinders of intermediate scale**
Ling Chen, Jifu Zhou
- 17:25 S03037 **Measurement and analysis of the interaction between internal solitary wave and submerged slender body in a stratified fluid tank**
Gang Wei, Hui Du, Mengmeng Gu, Xinglong Wang
- 17:40 S03042 **The numerical simulation of propeller sheet cavitation with a new cavitation model**
Dengcheng Liu

S04 Industrial and Environmental Fluid Mechanics**Chairmen: Andrew Seng Hock Ooi, Li Chen****14:00-15:45 Room D**

- 14:00 S04007 **Direct numerical simulation of three-dimensional gravity current on a uniform slope**
A. Ooi, N. Zgheib, S. Balachandar
- 14:15 S04002 **Investigation of rotor-rotor interaction on a two-stage counter-rotating fan**
Hengming Zhang, Xiuquan Huang, Xiang Zhang
- 14:30 S04003 **Longitudinal and transverse rolls in a triangular cavity**
Huimin Cui, Feng Xu
- 14:45 S04004 **Sediment concentration in steady rill flow: An analytical study**
Y. M. Li, Y. An, Q. Q. Liu
- 15:00 S04012 **Dynamics of hyporheic flow induced by three-dimensional bedforms**
Xiaobing Chen, Li Chen
- 15:15 S04013 **Comparison of steady blowing and synthetic jets for aerodynamic drag reduction of a simplified vehicle**
Wenshi Cui, Chao Xia, Zhigang Yang
- 15:30 S04016 **A simple study on the effects of green roof on the wind field of a low-rise building**
Wai Wing-Hong Onyx, Wenqing Hu, Chiwai Li, Jiemin Zhan

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S04 Industrial and Environmental Fluid Mechanics**Chairmen: Andrew Seng Hock Ooi, Li Chen****16:10-17:40 Room D**

- 16:10 S11011 **Transient simulation of heat transfers for vehicle exhaust system**
Guoquan Xiao
- 16:25 S11013 **Numerical simulation on cone self-acting gas lubrication bearing dynamics**
Guangqiang Chen, Yunjun Yang, Rongyan Ma, Bingyan Chen
- 16:40 S11016 **The influence of temperature gradient on the convective mixing phenomena of geologic sequestration of CO₂**
Junjun Sun, Qingyong Zhu
- 16:55 S04014 **Transient flows around a fin at different positions**
Jia Ma, Feng Xu
- 17:10 S04015 **Influence of the wheel rotation on underbody flow and aerodynamic forces of high speed train**
Jiali You, Yu Chen, Zhigang Yang
- 17:25 S11003 **The flow characteristics of axial-flow pump under stall conditions**
Rui Zhang, Hongxun Chen, Hui Xu, Jiangang Feng, Xiaosheng Wang

S11-2 Computational Fluid Dynamics**Chairmen: John Z. Shi, Jianjun Tao****14:00-15:45 Room E**

- 14:00 S11022 **An investigation of discontinuous Galerkin methods based on the Cartesian grids**
Shuai Liu, Yuelong He, Dun Li
- 14:15 S11040 **A class of high order hybrid DG/FV schemes for 2D RANS flows**
Ming Li, Laiping Zhang, Wei Liu, Xin He
- 14:30 S11041 **Applications of dynamic Cartesian grids method on unsteady flows involving moving boundaries**
Xiaowen Liu, Weijiang Zhou, Chuqun Ji
- 14:45 S11042 **Further study on the geometric conservation law with finite volume method on moving mesh**
Rong Ma, Xinghua Chang, Laiping Zhang, Xin He, Ming Li
- 15:00 S11044 **HyperFLOW: A structured/unstructured hybrid integrated computational environment for multi-purpose fluid simulation**
Xin He, Xianyao He, Laiping Zhang, Lei He, Zhong Zhao
- 15:15 S11063 **A pressure-velocity coupled based consistent, conservative method for MHD flow**
Junhua Pan, Mingjiu Ni, Nianmei Zhang
- 15:30 S11028 **Numerical investigation on microelectronic chip cooling using multiple orifice synthetic jet actuator based on theory field synergism**
Yao Ma, Zhixun Xia, Zhenbing Luo, Xiong Deng, Xuan Ma

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S11-2 Computational Fluid Dynamics**Chairmen: John Z. Shi, Jianjun Tao****16:10-17:55 Room E**

- 16:10 S11018 **Detached-eddy simulation of subsonic flow past a delta wing**
Yang Zhang, Laiping Zhang, Xin He, Xiaogang Deng
- 16:25 S11025 **The motion of a neutrally buoyant ellipsoidal particle in Poiseuille flows**
Xin Yang, Haibo Huang, Xiyun Lu
- 16:40 S11027 **Numerical investigation on limitation of Boussinesq equation for generating focusing waves**
Jinghua Wang, Qingwei Ma
- 16:55 S11050 **TPMC simulation of the interaction of two parallel flat plates in free molecular flow regime**
Xuhong Jin, Fei Huang, Xiaoli Cheng
- 17:10 S11015 **Transient thermodynamic behaviors of super-high temperature gas-carrying duct under rapid depressurization**
Jingbao Liu, Riqiang Duan, Tao Ma
- 17:25 S11068 **Numerical investigation of film cooling using RANS and LES**
Shuo Li, Jiemin Zhan, Yejun Gong, Wenqing Hu
- 17:40 S11049 **A corrected incompressible SPH method for fixed body wave impact simulation**
Ningbo Zhang, Xing Zheng, Xipeng Lü, Ye Miao

S08-2 Multiphase Flows, Non-Newtonian Flows and Flows in Porous Media**Chairmen: Lei Li, Yuewu Liu****14:00-15:45 Room F**

- 14:00 S08002 **Progress on percolation mechanism in low permeability formation**
Hu Guo, Yiqiang Li, Fuyong Wang, Zhiwei Chen, Zhaoyan Yu, Xian Gao, Yanshen Wang, Xiang Tang
- 14:15 S08004 **Modelling of migration of CO₂ in porous media under conditions of saline aquifers using LBM**
Yingqing Zu
- 14:30 S08005 **Finite analytic numerical method for fluid flows in heterogeneous porous media**
Xiaohong Wang, Zhifeng Liu, Xiaolei Zheng, Yangfeng Wang
- 14:45 S08013 **Shale gas reservoir flow mechanism and pressure analysis of fractured horizontal well**
Guangwei Han, Ruizhong Jiang, Zhen Sun, Gang Yang
- 15:00 S08029 **Heat transfer during the dissociation of hydrate in porous media**
Zhen Zhang
- 15:15 S08036 **A model of unsteady seepage flow in low-permeable coalbed with moving boundary in consideration of wellbore storage and skin effect**
Wenchao Liu, Yuewu Liu, Congcong Niu, Gufoeng Han, Yizhao Wan
- 15:30 S08040 **3D unsteady seepage flow model for partially penetrated CBM well in coalbed**
Yuewu Liu, Congcong Niu, Qiang Cai, Haisheng Li, Xiangyong Men

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S08-2 Multiphase Flows, Non-Newtonian Flows and Flows in Porous Media**Chairmen: Lei Li, Yuewu Liu****16:10-17:40 Room F**

- 16:10 S08012 **The flow of viscoelastic polymer solution in porous media**
Gang Yang, Ruizhong Jiang, Yihua Gao
- 16:25 S08006 **A numerical and theoretical investigation of the dynamic wetting transition on a moving substrate**
Ao Liu, Peng Gao
- 16:40 S08007 **CFD simulation of slugs dissipation for the inlet pipeline of cylindrical cyclone separator**
Xiaoming Luo, Yibin Wang, Limin He
- 16:55 S08010 **Long cracks fractured vertical well numerical simulation and application for tight oil reservoir**
Jianbin Fu, Ruizhong Jiang, Jianchun Xu
- 17:10 S08025 **An improved moving particle semi-implicit method for simulating viscous free surface flows without compressible stress instability**
Hao Xiang, Bin Chen
- 17:25 S08032 **Phase-field-based finite volume method for simulating thermocapillary flows**
Long Qiao, Zhong Zeng, Haiqiong Xie

Day-4, Wednesday, 27 May, 2015**MS1 Extreme Marine Environment****Chairmen: Hitoshi Tanaka, Hua Liu****08:30-11:50 Room C**

- 08:30 S03039 **Wave energy: Where do we stand today?**
Invited *Frederic Dias*
- 09:00 S03041 **Analytical model for concave shoreline induced by the 2011 tsunami**
Invited *Hitoshi Tanaka, Vo Cong Hoanga, Yuta Mitobe*
- 09:30 S03007 **On the magnetic anomaly at Easter Island during the 2010 Chile tsunami**
Benlong Wang, Hua Liu
- 09:50 S03025 **Runup of nonbreaking double solitary waves on a plan beach**
Hua Liu, Wei Wu, Yongliu Fang

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- 10:30 S06002 **Numerical study of excessive tsunami hazard in South China Sea**
Zhiyuan Ren, Hua Liu
- 10:50 S03036 **Application of compressible multi-component flow in underwater explosion problems**
Jun Yu, Jianqiang Pan, Haikun Wang, Haibin Mao
- 11:10 S11060 **Interaction between reflected shock and bubble of near-wall underwater explosion**
Bingchuan Nie, Jiachun Li, Huiqin Zhang
- 11:30 S04009 **Variation tendency of tropical cyclone activity in the Northwest Pacific**
Guoqin Lyu, Jiachun Li, Huiqin Zhang

S07 Plasma and Magneto-hydrodynamics**Chairmen: Rodion Stepanov, Xiaodong Niu****08:30-10:15 Room D**

- 08:30 S01004 **Bifurcation analysis of unipolar injection in a two dimensional cavity**
Bofu Wang
- 08:45 S07005 **Investigation of three-electrode SparkJet for shock wave control**
Yan Zhou, Bing Liu, Zhenbing Luo, Lin Wang, Zhixun Xia
- 09:00 S07006 **Numerical simulation on flow induced by dielectric barrier discharge plasma actuator**
Zhongjie Shao, Tiejin Wang
- 09:15 S07008 **Derivation of a continuum model for low temperature plasma flow and its application on arc discharge**
Bijie Yang, Quanhua Sun
- 09:30 S07010 **MHD and thermal issues in the U-bend of DCLL blanket**
Long Chen, Mingjian Li, Mingjiu Ni, Nianmei Zhang
- 09:45 S11062 **Direct simulation of single bubble motion under vertical magnetic field: Paths and wakes**
Jie Zhang, Mingjiu Ni
- 10:00 S07012 **Lorentz force particle analyzer**
Xiaodong Wang, Rene Moreau, Yanqing Tan, Zhen Tao

S10 Experimental Fluid Mechanics**Chairmen: Ivan Marusic, Jinjun Wang****08:30-11:15 Room E**

- 08:30 S10005 **Study of flush air data system technology for low cost flight test platform**
Guangqiang Chen, Bingyan Chen, Rongyan Ma, Weijiang Zhou
- 08:45 S10010 **An experimental investigation on dynamic wind loads and wake characteristics of wind turbine model sited over two-dimensional hill**
Wei Tian, Ahmet Ozbay, Hui Hu
- 09:00 S10011 **Spontaneous imbibition laws and the optimal formulation of fracturing fluid during hydraulic fracturing in Changqing Oilfield**
Guijuan Wang, Aifen Li
- 09:15 S10013 **A virtual particle images generation system for 3D-PTV verification**
Chengwu Wang, Zhen Wei
- 09:30 S10014 **Evolution of complexity in the incompressible transitional boundary layer of a flat plate**
Ruiqu Li, Junmou Shen, Dapeng Yao, Tianyi Li, Cunbiao Lee
- 09:45 S10006 **Measuring large scale flow structures behind a bluff body using a hot-wire rake**
Nan Gao, Yaqing Li, Honglei Bai
- Coffee break-----
- 10:30 S10015 **Experimental investigation on aerodynamics of a wing with tip sails in ground effect**
Chenghong Sun, Chin Dai
- 10:45 S10017 **Fluid-structure coupling between two tandem elastic cylinders**
Md. Mahbub Alam, Qin Sun, Yu Zhou
- 11:00 S10003 **Wall interference effect on the aerodynamics of high-speed train model**
Chao Xia, Xizhuang Shan, Zhigang Yang

MS3 Shale Gas Flow**Chairmen: Xiaolong Yin, Yu-Shu Wu****08:30-10:10 Room F**

- 08:30 S13001 **Unconventional flows in nanoporous unconventional reservoirs**
Invited
Erdal Ozkan
- 08:50 S13002 **Numerical simulation of coupled thermal-hydrological-mechanical processes in porous and fractured media**
Invited
Yushu Wu, Larry S. Fung, Philip H. Winterfeld
- 09:10 S13003 **Experimental study of mass and heat flux processes across porous media and free flow interface: Applications in land-atmospheric interactive modeling for climate studies**
Invited
Tissa H. Illangasekare
- 09:30 S13004 **Microscopic mechanism of kerogen decomposition, hydraulic fracturing, adsorption and transport in shale**
Invited
Yapu Zhao, Quanzi Yuan, Xueyan Zhu, Duo Li
- 09:50 S13005 **Numerical simulation of gas transport in ultra-tight shale gas reservoirs**
Hai Sun

-----Coffee break-----

MS3 Shale Gas Flow**Chairmen: Xiaolong Yin, Yu-Shu Wu****10:30-12:30 Room F**

- 10:30 S13006 **Correlation between stress sensitivity of permeability and pore geometry—experimental and numerical studies**
Invited *Xiaolong Yin*
- 10:50 S13007 **Modeling near wellbore flow phenomena using simulations at disparate length scales**
Invited *Mayank Tyagi*
- 11:10 S13008 **Study of the mechanisms of gas production in shale**
Invited *Mingzhe Dong*
- 11:30 S13009 **Porescale simulation in shale digital core using lattice Boltzmann method**
Lei Zhang
- 11:50 S13010 **Toward exact minimal discretization of flows in discrete fracture networks, application to modeling of shale gas reservoirs**
Invited *Benoit Noetinger*
- 12:10 S08009 **Numerical simulation of well-to-well tracer flow to estimate fractured reservoir geometry from tracer tests**
Guzel Bulgakova, Aidar Ilyasov