Singularities in Fluids and General Relativity
(16 Dec 2024–10 Jan 2025)

List of Speakers and Talk Titles

Speaker & Affiliation	Talk Title
Xinliang An National University of Singapore, Singapore	*Tutorial 1* Introduction to Mathematical General Relativity: Physical Heuristics *Tutorial 2* Trapped Surface Formation On Black Hole Formation
Leonardo Abbrescia Georgia Institute of Technology, USA	Energy Estimates for Shock Formation to the Full 3D Compressible Euler System without Assuming Additional Regularity on the Vorticity and Entropy
Ken Abe Osaka Metropolitan University, Japan	Stationary Self-similar Profiles for the Two-dimensional Inviscid Boussinesq Equations
Dallas Albritton University of Wisconsin–Madison, USA	Kinetic Shock Profiles for the Landau Equation
John Anderson Stanford University, USA	Shock Formation for the Einstein—Euler System
Stefanos Aretakis University of Toronto, Canada	Observational Signatures for Extremal Black Holes
Sanchit Chaturverdi Stanford University, USA	Zero Viscosity Limit of 1D Viscous Conservation Laws at the Point of First Shock Formation
Haoyang Chen National University of Singapore, Singapore	Low Regularity Ill-posedness for Elastic Waves and for MHD System in 3D and 2D
Maria Colombo École Polytechnique Fédérale de Lausanne, Switzerland	Flexibility of Two-Dimensional Euler Flows
Diego Córdoba Institute of Mathematical Sciences (ICMAT), Spain	Finite Time Singularities for Incompressible Fluids
Gianluca Crippa University of Basel, Switzerland	Non Local Conservation Laws with BV Kernel

Speaker & Affiliation	Talk Title
Eduard Feireisl Institute of Mathematics CAS, Czech Republic	Long Time Behaviour of Open Fluid Systems
Greg Fournodavlos University of Crete, Greece	A Localized Construction of Kasner-like Singularities
Dejan Gajic Universität Leipzig, Germany	Quasinormal Modes on Asymptotically Flat Spacetimes
Javier Gomez-Serrano Brown University, USA	Existence of Non Convex V-states
Mahir Hadzic University College London, UK	*Tutorial* Stability, Oscillations, and Damping in Galactic Dynamics
Taoran He National University of Singapore, Singapore	*Tutorial 1* Local Well-posedness of Einstein Vacuum Equations *Tutorial 2* Spacetime Decomposition and Double Null Formalism
Zhongtian Hu Duke University, USA	Suppression of Chemotactic Singularity by Navier-Stokes Flow with Large Buoyancy
Thomas Hou California Institute of Technology, USA	Potentially Singular Behavior of 3D Incompressible Navier-Stokes Equations
Sameer Iyer University of California, Davis, USA	Reversal in the Stationary Prandtl Equations
Juhi Jang University of Southern California, USA	Vacuum Free Boundary Problems in Gas Dynamics
In-Jee Jeong Seoul National University, S. Korea	*Tutorial* Desingularization and Vortex Confinement for Incompressible Euler Equations On the Rate of Vortex Stretching for Axisymmetric Euler Flows Without Swirl
Min Jun Jo Duke University, USA	Cusp Formation of Vortex Patches
Moon-Jin Kang KAIST, S.Korea	Stability of Small BV Solutions to Compressible Euler in a Class of Vanishing Physical Viscosity Limits

Speaker & Affiliation	Talk Title
Junha Kim Ajou University, S. Korea	On the Wellposedness of Alpha-SQG Equation in a Half-plane
Joachim Krieger École Polytechnique Fédérale de Lausanne, Switzerland	Finite Time Bubble Trees for the Energy Critical Wave Maps
Woojae Lee Yonsei University, S. Korea	Shock-type Singularity of the Hyperbolic-parabolic Chemotaxis System
Junbin Li Sun Yat-sen University, China	Gravitational Waves Perturbations to Perfect Fluid Naked Singularities
Warren Li Princeton University, USA	BKL Bounces Outside Homogeneity
Shi Zhuo Looi California Institute of Technology, USA	Onsager's Conjecture for the SQG Equation
Jonathan Luk Stanford University, USA	Late Time Tail of Waves on Dynamic Asymptotically Flat Spacetimes, Part I
Siyuan Ma Academy of Mathematics and Systems Science,CAS, China	Energy-Morawetz Estimates for Wave Equations in Perturbations of Kerr
Yasunori Maekawa Kyoto University, Japan	Local Rigidity of the Couette Flow for the Stationary Triple-deck Equations
Sung-Jin Oh University of California, Berkeley, USA	Late Time Tail of Waves on Dynamic Asymptotically Flat Spacetimes, Part II
Laurel Ohm University of Wisconsin–Madison, USA	Free Boundary Dynamics of an Elastic Filament in 3D Stokes Flow
Todd Oliynyk Monash University, Australia	Localised Big Bang Stability
Jaemin Park Yonsei University, S. Korea	Stability of Stratified Density under Incompressible Flows
Jan Sbierski The University of Edinburgh, UK	Singularity Structure of FLRW Spacetimes at Low Regularities
Matthew Schrecker University of Bath, UK	Stability of Gravitational Collapse

Speaker & Affiliation	Talk Title
Dawei Shen Columbia University, USA	*Tutorial 1* Stability of Minkowski Spacetime *Tutorial 2* Stability of Kerr Black Holes Global Stability of Minkowski Spacetime with Minimal and Borderline Decay
Jia Shi Massachusetts Institute of Technology, USA	Non-radial Implosion for Compressible Euler, Navier-Stokes and Defocusing NLS in T^d and R^d
Wenze Su National University of Singapore, Singapore	Shock Formation for Compressible Euler Equations and Related Systems via Self-similar Approach
Jeremie Szeftel Sorbonne University, France	Blow Up for Supercritical Defocusing NLS and Compressible Fluids
Martin Taylor Imperial College London, UK	Radiative Properties of Collisionless Matter in Isolated Charged Systems
Shouhong Wang Indiana University, USA	Einstein Equations, Dark Matter and Dark Energy
Zoe Wyatt University of Cambridge, UK	A New Phase Transition in Cosmological Fluid Dynamics
Zhouping Xin The Chinese University of Hong Kong, Hong Kong SAR	On the Prandtl's Boundary Layer Theory for Steady Sink-Type Flows
Tsuyoshi Yoneda Hitotsubashi University, Japan	Effectiveness of Littlewood-Paley Theory in the Study of Turbulence and Machine Learning
Sifan Yu National University of Singapore, Singapore	Low-Regularity Local Well-Posedness for the Elastic Wave System
Junyan Zhang National University of Singapore, Singapore	Low Mach Number Limit of Non-isentropic Ideal MHD with a Perfectly Conducting Boundary
Tao Zhou National University of Singapore, Singapore	Finite-time Blowup for Keller-Segel-Navier-Stokes System in Three Dimensions
Andrej Zlatos University of California, San Diego, USA	Stable Regime Singularity for the Muskat Problem

This list is accurate as of 08 Jan 25 and is subjected to changes.