Workshop Two: Black Holes, Naked Singularities, Shocks and Implosions

(6–10 January 2025)

ORGANIZING COMMITTEE

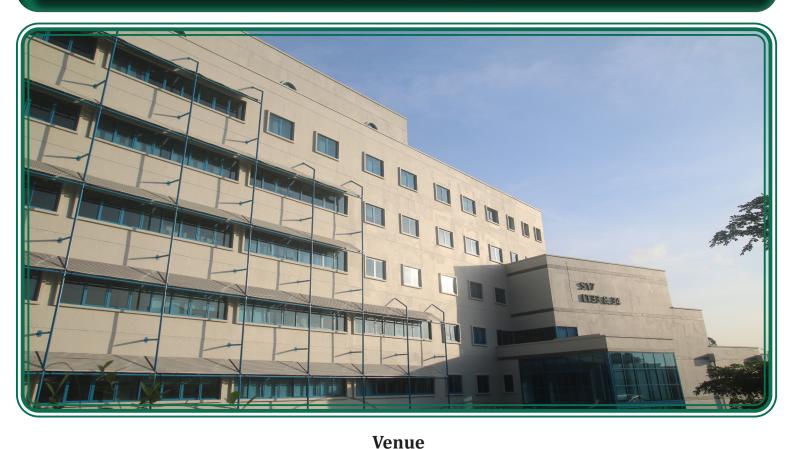
Co-chairs

Xinliang An National University of Singapore

Mihalis Dafermos University of Cambridge and Princeton University

> Juhi Jang University of South California

Yao Yao National University of Singapore



6–8 January 2025 IMS Executive Seminar Room 9–10 January 2025 LT34

Block S17, Level 3 10 Lower Kent Ridge Rd Singapore 119076

For more information: <u>https://ims.nus.edu.sg/events/singularities-in-fluids-and-general-relativity/</u>

Singularities in Fluids and General Relativity

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Monday, 06 Jan 2025				
Time	Title	Speaker		
0900-0930	Registration			
0930-1020	Blow Up for Supercritical Defocusing NLS and Compressible Fluids	Jeremie Szeftel Sorbonne University, France		
1020-1110	Observational Signatures for Extremal Black Holes	Stefanos Aretakis University of Toronto, Canada		
1110-1140	Tea Break			
1140-1230	Shock Formation for the Einstein—Euler System	John Anderson Stanford University, USA		
1230-1400	Lunch Break			
1400-1450	Energy-Morawetz Estimates for Wave Equations in Perturbations of Kerr	Siyuan Ma Academy of Mathematics and Systems Science,CAS, China		
1450-1540	Global Stability of Minkowski Spacetime with Minimal and Borderline Decay	Dawei Shen Columbia University, USA		
1600	Social Activity Excursion to Marina Bay Sands 1-way transfer from IMS to MBS Convention Centre			
Tuesday, 07 Jan 2025				
Time	Title	Speaker		
0915-0930	Registration			
0930-1020	Late Time Tail of Waves on Dynamic Asymptotically Flat Spacetimes, Part I	Jonathan Luk Stanford University, USA		
1020-1110	Late Time Tail of Waves on Dynamic Asymptotically Flat Spacetimes, Part II	Sung-Jin Oh University of California, Berkeley, USA		
1110-1140	Group Photo & Tea Break			
1140-1230	Quasinormal Modes on Asymptotically Flat Spacetimes	Dejan Gajic Universität Leipzig, Germany		
1230-1400	Lunch Reception at IMS			

Tuesday, 07 Jan 2025				
Time	Title	Speaker		
1400-1450	Singularity Structure of FLRW Spacetimes at Low Regularities	Jan Sbierski The University of Edinburgh, UK		
1450-1540	Energy Estimates for Shock Formation to the Full 3D Compressible Euler System without Assuming Additional Regularity on the Vorticity and Entropy	Leonardo Abbrescia Georgia Institute of Technology, USA		
1540-1610	Tea Break			
1610-1700	Zero Viscosity Limit of 1D Viscous Conservation Laws at the Point of First Shock Formation	Sanchit Chatuverdi Stanford University, USA		
Wednesday, 08 Jan 2025				
Time	Title	Speaker		
0915-0930	Registration			
0930-1020	Finite Time Bubble Trees for the Energy Critical Wave Maps	Joachim Krieger École Polytechnique Fédérale de Lausanne, Switzerland		
1020-1110	On Black Hole Formation	Xinliang An National University of Singapore, Singapore		
1110-1400	Lunch Break			
1400-1500	<u>Colloquium talk by Fields Medalist on Probability</u> From fields to random geometric structures and back	Wendelin Werner <i>University of Cambridge, UK</i>		
1500-1530	Tea Break			
1530-1630	<u>Colloquium talk</u> On the Black Hole Stability Problem	Jeremie Szeftel Sorbonne University, France		
Thursday, 09 Ja	an 2025			
Time	Title	Speaker		
0915-0930	Registration			
0930-1020	Localised Big Bang Stability	Todd Oliynyk Monash University, Australia		
1020-1110	A New Phase Transition in Cosmological Fluid Dynamics	Zoe Wyatt University of Cambridge, UK		
1110-1140	Tea Break			
1140-1230	BKL Bounces Outside Homogeneity	Warren Li Princeton University, USA		
1230-1400	Lunch Break			

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Thursday, 09 Jan 2025				
Time	Title	Speaker		
1400	<u>Social Activity</u>			
	Sungei Buloh Wetland Reserve 1-way transfer from IMS to Sungei Buloh Wetland Reserve.			
	Dinner @ Long Beach Seafood Robertson Quay 1-way transfer from Sungei Buloh Wetland Reserve to dinner location.			

Friday, 10 Jan 2025				
Time	Title	Speaker		
0915-0930	Registration			
0930-1020	A Localized Construction of Kasner-like Singularities	Greg Fournodavlos <i>University of Crete, Greece</i>		
1020-1110	Gravitational Waves Perturbations to Perfect Fluid Naked Singularities	Junbin Li Sun Yat-sen University, China		
1110-1140	Tea Break			
1140-1230	Radiative Properties of Collisionless Matter in Isolated Charged Systems	Martin Taylor Imperial College London, UK		