

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

(6–10 January 2025)

ORGANIZING COMMITTEE

Co-chairs

Xinliang An

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Venue

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

Singularities in Fluids and General Relativity
Workshop Two: Black Holes, Naked Singularities, Shocks and Implosions
(6–10 January 2025)

Monday, 06 Jan 2025		
Time	Title	Speaker
0900–0930	Registration	
0930–1020	Blow Up for Supercritical Defocusing NLS and Compressible Fluids	Jeremie Szeftel <i>Sorbonne University, France</i>
1020–1110	Observational Signatures for Extremal Black Holes	Stefanos Aretakis <i>University of Toronto, Canada</i>
1110–1140	Tea Break	
1140–1230	Shock Formation for the Einstein—Euler System	John Anderson <i>Stanford University, USA</i>
1230–1400	Lunch Break	
1400–1450	Energy-Morawetz Estimates for Wave Equations in Perturbations of Kerr	Siyuan Ma <i>Academy of Mathematics and Systems Science, CAS, China</i>
1450–1540	Global Stability of Minkowski Spacetime with Minimal and Borderline Decay	Dawei Shen <i>Columbia University, USA</i>
1600	<u>Social Activity</u> 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 <i>Stanford University, USA</i>
1020–1110	Late Time Tail of Waves on Dynamic Asymptotically Flat Spacetimes, Part II	Sung-Jin Oh <i>University of California, Berkeley, USA</i>
1110–1140	Group Photo & Tea Break	
1140–1230	Quasinormal Modes on Asymptotically Flat Spacetimes	Dejan Gajic <i>Universität Leipzig, Germany</i>
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 <i>The University of Edinburgh, UK</i>
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 <i>Georgia Institute of Technology, USA</i>
1540–1610	Tea Break	
1610–1700	Zero Viscosity Limit of 1D Viscous Conservation Laws at the Point of First Shock Formation	Sanchit Chatuverdi <i>Stanford University, USA</i>
Wednesday, 08 Jan 2025		
Time	Title	Speaker
0915–0930	Registration	
0930–1020	Finite Time Bubble Trees for the Energy Critical Wave Maps	Joachim Krieger <i>École Polytechnique Fédérale de Lausanne, Switzerland</i>
1020–1110	On Black Hole Formation	Xinliang An <i>National University of Singapore, Singapore</i>
1110–1400	Lunch Break	
1400–1500	<i>Colloquium talk by Fields Medalist on Probability</i> From fields to random geometric structures and back	Wendelin Werner <i>University of Cambridge, UK</i>
1500–1530	Tea Break	
1530–1630	<i>Colloquium talk</i> On the Black Hole Stability Problem	Jeremie Szeftel <i>Sorbonne University, France</i>
Thursday, 09 Jan 2025		
Time	Title	Speaker
0915–0930	Registration	
0930–1020	Localised Big Bang Stability	Todd Oliynyk <i>Monash University, Australia</i>
1020–1110	A New Phase Transition in Cosmological Fluid Dynamics	Zoe Wyatt <i>University of Cambridge, UK</i>
1110–1140	Tea Break	
1140–1230	BKL Bounces Outside Homogeneity	Warren Li <i>Princeton University, USA</i>
1230–1400	Lunch Break	

Thursday, 09 Jan 2025		
Time	Title	Speaker
1400	<i>Social Activity</i>	
	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 <i>Sun Yat-sen University, China</i>
1110–1140	Tea Break	
1140–1230	Radiative Properties of Collisionless Matter in Isolated Charged Systems	Martin Taylor <i>Imperial College London, UK</i>