

Stability and Instability in General Relativity
26-30 September 2022
L2

Schedule

Monday, 26 September: Singularity

- 10:00-11:00 Yakov Shlapentokh-Rothman, *Self-similarity and naked singularities for the Einstein vacuum equations*
- 11:00-11:15 Coffee
- 11:15-12:15 Carsten Gundlach, *Critical phenomena in gravitational collapse: codimension-one stability of naked singularity formation*
- 12:15-14:00 Lunch
- 14:00-15:00 Gregorios Fournodavlos, *On the nature of the Big Bang singularity*
- 15:00-15:15 Coffee
- 15:15-16:15 Hans Ringstrom, *Cosmological singularities and initial data on the big bang*
- 16:15-17:00 Discussion

Tuesday, 27 September: AdS and theoretical physics

- 10:00-11:00 Piotr Bizon, *Resonant dynamics in AdS spacetimes*
- 11:00-11:15 Coffee
- 11:15-12:15 Jorge Santos, *The classical interior of charged black holes with AdS asymptotics*
- 12:15-14:00 Lunch
- 14:00-15:00 Helvi Witek, *On dynamical scalarization and descalarization of black holes in quadratic gravity*
- 15:00-15:15 Coffee
- 15:15-16:15 Georgios Moschidis, *Weakly turbulent phenomena in general relativity*
- 16:15-17:00 Malcolm Perry

Wednesday, 28 September – Clay Research Conference, L1

- 10:00-11:00 Bhargav Bhatt, *Vanishing theorems in algebraic geometry*
- 11:00-11:30 Coffee
- 11:30-12:30 Kevin Costello, *Scattering amplitudes and vertex algebras*
- 12:30-14:00 Lunch
- 14:00-15:00 Igor Rodnianski, *(some) Things you always wanted to know about Mathematical General Relativity (but were too afraid to ask)*
- 15:00-15:30 Coffee
- 15:30-16:30 Jacob Tsimerman, *The André—Grothendieck Period conjecture over function fields*
- 16:30-17:30 Peter Scholze, *The work of Bhargav Bhatt*
Ulrike Tillmann, *The work of Søren Galatius and Oscar Randal-Williams*
Presentation of the 2021 and 2022 Clay Research Awards
- 17:30-19:00 Reception in the Mathematical Institute

Thursday, 29 September: Stability

- 10:00-11:00 Zoe Wyatt, *Global stability of spacetimes with supersymmetric compactifications*
- 11:00-11:15 Coffee
- 11:15-12:15 Gustav Holzegel, *Stability problems for black hole spacetimes*
- 12:15-14:00 Lunch

14:00-15:00 Jeremie Szeftel, *The nonlinear stability of Kerr for small angular momentum*
15:00-15:15 Coffee
15:15-16:15 Rita Teixeira da Costa, *Decay for the Teukolsky equation on subextremal Kerr black holes*

Friday, 30 September: Instability/Beyond stability

10:00-11:00 Jacques Smulevici, *Non-linear periodic waves on AdS*
11:00-11:15 Coffee
11:15-12:15 Jonathan Luk, *A tale of two tails*
12:15-14:00 Lunch
14:00-15:00 Dejan Gajic, *Stability and instability of waves on extremal Kerr spacetimes*
15:00-15:15 Coffee
15:15-16:15 Christoph Kehle, *Diophantine approximation as Cosmic Censor for AdS black holes*
16:15-17:00 Discussion