

Mathematical and Computational Challenges in the Era of Gravitational Wave Astronomy

Thursday September 23, 2021

- 2:15–2:20 *Welcome & Introduction*
- 2:20–2:50 **Marina Berbel** (Autonomous University of Barcelona)
Numerical approximation of special relativistic hydrodynamics

Tuesday September 28, 2021

- 2:15–2:45 **Simone Albanesi** (University of Turin)
Effective one-body models for generic orbits
- 3:30–4:00 **Ryan Quitzow-James** (Missouri University of Science and Technology)
NNETFIX: An artificial neural network-based denoising engine for gravitational-wave signals

Thursday September 30, 2021

- 2:15–2:45 **Li Li** (Institute for Pure and Applied Mathematics)
Inverse problems for classical and fractional partial differential equations.
- 3:15–3:45 **Kevin Chien** (University of Washington)
Dirichlet-to-Neumann Data from Geometric Quantities

Tuesday October 12, 2021

- 2:15–2:45 **Fabrizio Di Giovanni** (University of Valencia)
Nonlinear dynamics of boson and fermion-boson stars using numerical relativity
- 3:15–3:45 **Miquel Miravet** (University of Valencia)
SUB-GRID MODELING IN (GR)MHD SIMULATIONS

Thursday October 14, 2021

- 2:15–2:45 **Joana Teixeira** (University College London)
General relativistic Radiation Transport
- 3:15–3:45 **Lorena Magaña Zertuche** (University of Mississippi)
High Precision Ringdown Fitting



Tuesday October 19, 2021

- 2:15–2:45 **Kevin Stubbs** (Institute for Pure and Applied Mathematics)
The Mathematics of Wannier Functions
- 3:15–3:45 **Davide Guerra** (University of Valencia)
Relativistic axion boson star

Wednesday October 20, 2021

- 1:45–2:45 **Mairi Sakellariadou** (King's College London)
Hunting for the gravitational wave background: implications for astrophysics, high energy physics and the early universe
- 3:15–4:00 **Miguel Bezares** (International School for Advanced Studies (SISSA/ISAS))
K-dynamics: Dynamics of screening in the strong-field regime

Thursday October 21, 2021

- 2:15–2:45 **Yanyan Zheng** (Missouri University of Science and Technology)
Gravitational Wave Searches from Core-Collapse Supernova

Tuesday November 2, 2021

- 2:15–2:45 **Dimitra Tseneklidou** (Eberhard-Karls-Universität Tübingen)
Neutron star oscillations in the 3+1 formalism
- 3:15–3:45 **Yu-Hsien Kung** (National Taiwan University)
Verifying the black hole soft hair at ringdown stage

Thursday November 4, 2021

- 2:15–2:45 **Peter Cameron** (University of Cambridge)
Causal structure at infinity and the positive mass theorem
- 3:15–3:45 **Tousif Islam** (University of Massachusetts Dartmouth)
Eccentric binary black hole surrogate models for the gravitational waveform and remnant properties

Tuesday November 9, 2021

- 3:15–3:45 **Yang Zhang** (University of Washington)
Microlocal Analysis in Inverse Problems
- 4:00–4:30 **S. Hunter Gawboy** (California State University, Los Angeles (CSU Los Angeles))
“A Variety of Topics (Which Might be Related)”

Wednesday November 10, 2021

- 2:15–2:45 **Lucy Thomas** (University of Birmingham)
‘A New Effective Precession Spin For Modelling Precessing Higher-Modes in the Strong-Field Regime’

Thursday November 11, 2021

8:00 *Veterans Day - IPAM closed*

Thursday November 25, 2021

8:00 *Thanksgiving - IPAM closed*

Friday November 26, 2021

8:00 *Thanksgiving - IPAM closed*