Tamara Evstafyeva

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About me

I am a third year PhD student at the University of Cambridge pursuing research in Department of Applied Mathematics and Theoretical Physics. The focus of my work has been studying the phenomenology of binary black hole and boson star binaries through the prism of numerical simulations. My work also extends to certain modified theories of gravity and tests of general relativity using Bayesian inference. I enjoy working in interdisciplinary fields combining mathematics, theoretical physics and data science.

Education

- **University of Cambridge** — Cambrige, UK
  PhD in Applied Mathematics and Theoretical Physics — *2020 - present*
- **University College London, UCL** — London, UK
  MSci in Mathematics; 1st class — *2016 - 2020*
  Main courses: *General Relativity, Cosmology, Differential Geometry, Numerical Analysis, Fluid Dynamics*

Skills Summary

- **Coding**: Python, C, C++, Bash, Mathematica, MATLAB
- **Languages**: English, Russian, French

Publications

- **Unequal-mass boson-star binaries. Initial data and merger dynamics**: T. Evstafyeva, U. Sperhake, and et.al., 2023, Classical and Quantum Gravity 40, 085009
- **Measuring the ringdown scalar polarization of gravitational waves in Einstein scalar Gauss-Bonnet gravity**: T. Evstafyeva, M. Agathos, J. Ripley, 2023, Physical Review D 107, 124010
- **The gravitational afterglow of boson stars**: R.Croft, T.Helfer, B. Ge, M. Radia, T. Evstafyeva, E. A. Lim, U. Sperhake, K. Clough, 2023, Classical and Quantum Gravity 40, 065001

Awards

- **Smith-Knight and Rayleigh-Knight Prize**: (2023)
- **Science and Technology Facilities Council funding grant**: (2020)

Conference Talks and Outreach

- **BritGrav**: Southampton, (2023)
- **Cambridge GR seminar**: Cambridge, (2023)
- **Frontiers in Numerical Relativity**: Jena, (2022)
- **Visualization in ParaView Tutorial**: Cambridge, (2022)
- **Diversity at DAMTP**: Cambridge, (2022)
- **HE Plus lecture on black holes**: Cambridge, (2020)

Professional Associations

- **GRChombo numerical relativity code member**: implementation of EsGB/dCS theories of gravity using an order reduction scheme and initial data construction for unequal-mass boson stars
- **LIGO/Virgo member**: participation in Testing General Relativity (TGR) group
- **Einstein Telescope member**: general member

Teaching and Departmental Activities

- Supervision of Part II General Relativity, (2020 - present)
- Organiser of Numerical Relativity group meetings at DAMTP, (2021 - present)
- Mentor to 1st year women in mathematics, (2022 - present)
- Supervision of Part II Electrodynamics, (2020 - 2022)
- IB Mathematics Higher Level tutor at Westminster Academy, (2019)
- Mathematics tutor at JK Educate, (2018-2020)
- Teach First Insight internship participant: offered a graduate job (2018)