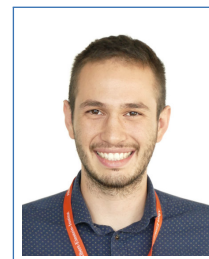


Lorenzo Speri

PhD Student

in Gravitational-Wave Physics

Albert Einstein Institute
Am Mühlenberg 1
14476 Potsdam-Golm, Germany
☎ +39 333 8341919
✉ lorenzo.speri@aei.mpg.de
Born: 26/01/1996



Education

- September 2020 - **PhD**, Max Planck Institute for Gravitational Physics (Albert Einstein Institute), supervisor: Jonathan R. Gair, jonathan.gair@aei.mpg.de.
Waveform modeling of Extreme Mass Ratio Inspirals.
Statistical methods for LISA gravitational wave observations as probes for cosmology.
Development of robust statistical tools for Pulsar Timing Array analysis.
- 2018 - 2020 **Master of Theoretical Physics MSc**, University of Heidelberg.
Master thesis: *Effective Resonance Model: a small step for the constants of motion, a giant leap for biases in EMRI parameter estimation* jointly supervised by Prof. Jonathan Gair (Max Planck Institute for Gravitational Physics) and Prof. Matthias Bartelmann (University of Heidelberg).
Degree examination: 1 (Very good).
- 2015 - 2018 **Bachelor of Physics BSc**, University of Trento.
Erasmus+ Programme Scholarship: 10 months as an exchange student at the University of Oslo (2017/2018).
Thesis: *Analyzing Gravitational Waves through Numerical Simulations of Compact Binaries* under the supervision of Prof. Bruno Giacomazzo.
Degree examination: 110/110
- 2010 - 2015 **High School Diploma**, Institute L. Calabrese - P. Levi, San Pietro in Cariano (VR), Italia.
Scientific High School Diploma.

Publications

- 09/04/2021 **FastEMRIWaveforms: New tools for millihertz gravitational-wave data analysis**, M. L. Katz, A. J. K. Chua, L. Speri, N. Warburton, S. A. Hughes.
<https://arxiv.org/abs/2104.04582>
- 12/03/2021 **Assessing the impact of transient orbital resonances**, L. Speri and J. R. Gair.
<https://arxiv.org/abs/2103.06306>
- 20/10/2020 **Testing the Quasar Hubble Diagram with LISA Standard Sirens**, L. Speri, N. Tamanini, R.R. Caldwell, J.R. Gair and B. Wang.
Phys. Rev. D 103, 083526 (2021)

Talks

- 23/04/2021 **Pulsar selection methods**, EPTA spring meeting.
- 21/04/2021 **Assessing the impact of transient orbital resonances**, University of Southampton.
- 27/02/2020 **Transient resonances and Gravitational Waves from EMRIs**, Heidelberg Institute for Theoretical Studies HITS.
- 25/02/2020 **Effects of transient resonances on Gravitational Waves from EMRIs**, University of Heidelberg.

Awards and Scholarship

- September 2019 **Merit Award**, University of Trento.
2019 Students who have achieved remarkable results at the end of their degree
- 2017 **Erasmus+ Programme Scholarship**, University of Oslo.
4000 euros to support the exchange programme.

Teaching Experience

Winter Semester 2020/2021 **Teaching assistant of Prof. Dr. Alessandra Buonanno for the course of Gravitational Waves, Humboldt University.**

Memberships and Organisational Duties

- 2020 - **LISA Consortium member.**
- 2020 - **EPTA member.**
- 2020 - **AEI LISA meeting organiser.**

In charge of organising monthly meetings related to LISA science at the Max Planck Institute for Gravitational Physics (Albert Einstein Institute).

Conferences, Workshops and Schools

- 7/10/20 **Writing About Science, Online.**
- 1-3/09/20 **LISA Symposium XIII, Online.**
- 25-27/05/20 **BHPToolkit Spring 2020 workshop, Online.**
- 20-24/05/19 **The Mysterious Universe: Dark Matter - Dark Energy - Cosmic Magnetic Fields, Mainz Institute for Theoretical Physics, Johannes Gutenberg University.**
- 13-15/05/19 **LISA Waveform Working Group Meeting, Max Planck Institute for Gravitational Physics (Albert Einstein Institute), Potsdam.**
- 8-12/04/19 **Advanced Workshop on Accelerating the Search for Dark Matter with Machine Learning, ICTP, Trieste.**
- 11-22/03/19 **Theoretical Aspects of Astroparticle Physics, Cosmology and Gravitation, Galileo Galilei Institute, Firenze.**
- 09/2018 **Gaia Data & Science, University of Heidelberg.**
- 04/2018 **Spring workshop in nuclear and particle physics, CERN.**
- 09/2014 **Discovering high-mass particles with CMS, University of Padova.**

IT Skills

C/C++, Python, Matlab for Scientific Programming.

Numerical simulations of Extreme Mass Ratio Inspirals, prediction of Hubble expansion function with measurements of SuperNovae Type Ia using function basis series, parallelized Monte Carlo sampling, Crank-Nicolson algorithm for solving 2d diffusion equation, ODE solvers.

EinsteinToolkit, Cactus Framework.

Numerical relativistic simulations of compact binaries.

Language Skills

Italian	Native language
English	Fluent
German	B2

Other

Academic Website, <https://www.aei.mpg.de/person/102224>.

GitHub Website, <https://github.com/lorenzsp>.

Personal Interests.

I play piano and I love listening to classical music. I have played rugby for six years, but I also like swimming, skiing and climbing.