Giona Sala

RWTH Aachen, Germany (DE) gsala@physik.rwth-aachen.de
Website G.Sala.5 SalaPh 0009-0001-3716-862X gionasala

Research experience

PhD **Rheinisch-Westfälische Technische Hochschule (RWTH) Aachen**, Aachen, DE
Doctorate in Theoretical Physics — Oct 2023 – present

- Topic: *Gravitational Wave Cosmology*
- Supervisor: Julien Lesgourgues

Education

MSc **École Polytechnique Fédérale de Lausanne (EPFL)**, Lausanne, CH
Master of Science in Physics — Sep 2020 – Apr 2023

- Focus on Theoretical Particle Physics
- Minor in space technologies

Université de Genève (UniGe), Geneva, CH
Master's thesis — Sep 2022 – Apr 2023

- Title: *Implications of Primordial Black Holes physics at high red-shifts*
- Supervisor: Antonio Riotto

BSc **Eidgenössische Techniche Hochschule Zürich (ETHZ)**, Zürich, CH
Bachelor of Science in Physics — Sep 2017 – Sep 2020

- Final project on Hardy's Paradox

University of Toronto (UofT), Toronto, CA
Exchange — Sep 2019 – Dec 2019

Publications

Detecting White Dwarf Binary Mergers with Gravitational Waves Oct 2025
Giona Sala, Chiara Brandenstein, Sebastian Baum, Peter W. Graham
arXiv:2510.19913 [gr-qc]

Inferring cosmological parameters from galaxy and dark sirens cross-correlation Oct 2025
Giona Sala, Alessandro Cuoco, Julien Lesgourgues, Kostantinos-Rafail Revis, Lorenzo Valbusa Dall'Armi, Santiago Casas
arXiv:2510.08699 [astro-ph.CO]

Conference contributions & talks

MAGIS-100 meetings Online (Fermilab, US), Nov 2025

- Presentation on *Detecting White Dwarf Binary Mergers with Gravitational Waves*

Invisibles25 Workshop CERN, CH, Sep 2025

- Presentation and poster on *Inferring cosmological parameters from galaxy and dark sirens cross-correlation*

WE-Heraeus-Seminar: new windows on the Universe Kitzbühel, A, May 2025

- Poster on *Inferring cosmological parameters from galaxy and dark sirens cross-correlation*

European Consortium for Astroparticle Theory (EuCAPT) Annual Symposium — Online (CERN, CH), May 2025

- Plenary lightning talk on *Inferring cosmological parameters from galaxy and dark sirens cross-correlation*

Additional relevant experiences

Teaching experience

RWTH, — Aachen, DE
Teaching assistant — Apr 2024 – present

- Supervision:
  - Master's thesis on *Component separation algorithms for the gravitational wave backgrounds*
  - Bachelor's thesis on *Separation of the cosmological and astrophysical gravitational wave background*
- Courses: Theory of Relativity and Cosmology x2; The ingredients of the universe; Theoretical Physics I: Mechanics

EPFL, — Lausanne, CH
Teaching assistant — Sep 2021 – Jan 2023

- Courses: General Physics: Electromagnetism x2, General Physics II, Experimental Physics I, Physics IV

Work experience

Fondazione Istituto Ricerche Solari (IRSOL), — Locarno-Monti, CH
Civil Service — Apr 2023 – Aug 2023

- Solar research technical and scientific collaborator

Scuola Universitaria Professionale della Svizzera Italiana (SUPSI), — Mendrisio, CH
Civil Service — Jun 2022 – Jul 2022

- Renewable energy research collaborator

Extracurricular activities

EPFL Spacecraft Team (EST), — Lausanne, CH
System engineer team leader — Sep 2021 – Jun 2022

- Student association that coordinates the CHESS (Constellation of High Energy Swiss Satellites) space mission

EPFL Rocket Team (ERT), — Lausanne, CH
Payload team leader — Sep 2020 – Oct 2021

- Team of students from EPFL building Bella Lui II 2021 rocket for international competitions

Akademische Raumfahrt Initiative Schweiz (ARIS), — Zürich, CH
Structure engineer support — Feb 2020 – Jul 2020

- The student association for space in the german part of Switzerland, buildin EULER 2020 rocket

Skills

Programmes

Mathematica	●●●●○	MontePython	●●●●○
Excel	●●●●●	CLASS	●●○○○

Programming languages

Python	●●●●●	C++	●●○○○
LaTeX	●●●●●	MATLAB	●○○○○

Languages

Italian	Native	French	●●●●○
English	●●●●●	German	●●●○○

References

Julien Lesgourgues

Prof. Dr.
Institute for Theoretical Particle Physics and Cosmology
RWTH Aachen
lesgourg@physik.rwth-aachen.de

Antonio Riotto

Prof. Dr.
Department of theoretical physics
Université de Genève
antonio.riotto@unige.ch

Peter W. Graham

Prof. Dr.
Leinweber Institute for Theoretical Physics
Stanford University
pwgraham@stanford.edu

Sebastian Baum

Dr.
Mid Sweden University
baum.sebastian@gmail.com