

Šimon Knoška

0000-0003-3170-5663 | researcher
simon.knoska@matfyz.cz

RESEARCH INTEREST

Modified Theories of Gravity • Strong Gravity • Black Holes • Gravitational Waves • Exact Solutions • QNMs

EDUCATION & RESEARCH

RESEARCHER | Astronomical Institute of the Czech Academy of Sciences
Quasinormal modes in modified gravities
Sep 2025 – Present | Prague, CZ

DOCTORAL STUDIES IN THEORETICAL PHYSICS, ASTRONOMY AND ASTROPHYSICS | Charles University
Faculty of Mathematics and Physics
Institute of Theoretical Physics
Oct 2021 – Sep 2026 | Prague, CZ

MASTER'S STUDIES IN THEORETICAL PHYSICS
Charles University
Faculty of Mathematics and Physics
Institute of Theoretical Physics
Thesis: Schwarzschild-Bach black holes
Oct 2019 – Jun 2021 | Prague, CZ

BACHELOR'S STUDIES IN GENERAL PHYSICS
Charles University
Faculty of Mathematics and Physics, Charles Uni
Thesis: Conformally related spacetimes
Oct 2016 – Jun 2019 | Prague, CZ

SKILLS

PROGRAMMING Python (gravipy, sympy, numpy, scipy, matplotlib) • Mathematica • $\text{\LaTeX}$

CONFERENCES

5TH EPS CONFERENCE ON GRAVITATION | poster
Unlocking Gravity Through Computation
Dec 2024 | Prague

RELATIVISTIC QUANTUM INFORMATION CONFERENCE | poster
QFT in curved spacetime - Foundations
Aug 2024 | Prague

BH WORKSHOP XVI | talk
Black Hole Conference
Dec 2023 | Porto, PT

SUMMER SCHOOL IN GRAVITY | summer school
Gravity@Prague
Sep 2022 | Prague

CONFERENCE ON RELATIVISTIC ASTROPHYSICS | talk
31st Texas Symposium on Relativistic Astrophysics
Sep 2022 | Prague

EXPERIENCE

ACADEMIC VISIT

Quantum imprints of gravitational shockwaves
Fakultät für Mathematik
Universität Wien
2025 | Vienna, AT

GAUK | co-researcher

Higher derivative and non-Lorentzian gravity
Charles University Grant
2025 – 2028 | Prague, CZ

GAUK | co-researcher

Study of the exact black-hole solutions
Charles University Grant
2021 – 2023 | Prague, CZ

FYKOS | co-organiser

Correspondence competition in physics for high school students
2016 – 2020 | Prague, CZ

- creating and solving physics problems
- organising popularising lectures and excursions

WORKSHOP IN STRONG GRAVITY | participant
New frontiers in strong gravity
Jul 2022 | Benasque, SP

WDS 2022 | talk
Week of doctoral students
Jun 2022 | Prague, CZ

BH WORKSHOP XIV | talk
Black Hole Conference
Dec 2021 | Aveiro, PT

RELATIVITY SEMINAR ITP | talk
Relativity Seminar of the Institute of Theoretical Physics
Dec 2021 | Prague, CZ

ICPS 2019 | poster presentation
International Conference of Physics Students
Aug 2019 | Cologne, DE

LIST OF PUBLICATIONS

- [1] Š. Knoška, D. Kofroň, and R. Švarc (2026), *Exact Bachian singularity in quadratic gravity*, Phys. Rev. D **113**, 124020.
- [2] Š. Knoška, D. Kofroň, and R. Švarc (2025), *Linear perturbations of Kerr black hole in quadratic gravity*, Phys. Rev. D **112**, 104058.