

Mateo Paulišić

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Curriculum Vitae

Education

- 2010–2016 **mag. phys.**, *Faculty of science*, University of Zagreb.
master thesis : Spacetime singularities, advisor: assoc. prof. Ivica Smolić
- 2016 -2017 **PhD**, *Faculty of science*, University of Zagreb.
advisor: prof. Predrag Dominis Prester
- 2018 - 2023 **PhD**, *Faculty of Physics*, University of Rijeka.
advisor: prof. Predrag Dominis Prester
PhD thesis: Higher-spin-like symmetries and gauge models, defended on 2.2.2023.

Working experience

- 2016 - 2023 **Research and teaching assistant**, *Faculty of Physics*, University of Rijeka.
As a PhD student, working in the group of professor Predrag Dominis Prester at the Division for Theoretical Physics and Astrophysics, mainly focused on higher spin symmetries and fields.

Teaching duties:

- General relativity (1st year master, ac. yrs. 2016 - 2023)
 - Classical Mechanics I (2nd year undergrad., ac. yrs. 2016 - 2022)
 - Classical Mechanics II (2nd year undergrad, ac. yrs. 2016 - 2022)
 - Medical physics and biophysics - Laboratory excercises (1st year students of medicine ac. yrs. 2016 - 2018, 2019 - 2021)
 - Physics Laboratory I (1st year undergrad., ac. yr. 2016)
 - Modern Physics II (2nd year undergrad. ac. yr. 2017)
- in 2021 received award for excellence in teaching by the University of Rijeka

Additional duties:

- Coordinator for the vulnerable and underrepresented
- Representative of assitants in the Department council

Collaborated on research projects:

- 2016- 2016 - **Gravity under extreme conditions and unification of forces** - University research project - leader: prof. Predrag Dominis Prester, University of Rijeka
- 2017 - 2018 - **Gravity and parity violation (2014. - 2018.)** - project supported by the Croatian Science Foundation., leader: assoc. prof. Maro Cvitan, University of Zagreb
- 2018 - - **Quantum field theory, gravity and unification of forces** - University research project - leader: prof. Predrag Dominis Prester, University of Rijeka

Schools, visits and attendances, workshops

- Jun-Jul 2017 **First Zagreb School of Theoretical Physics**, *Institute Ruđer Bošković*, Zagreb (Croatia).

- Jan-Mar 2018 **Visiting Students PhD Training Program**, SISSA, Trieste (Italy).
- Oct 2018 **The Philosophy and Physics of Noether's theorems**, *University of Notre Dame*, London (UK), A centenary conference on the 1918 Work of Emmy Noether.
- Jul 2019 **ICTP School on Geometry and Gravity**, *ICTP*, Trieste (Italy).
- Feb 2020 **Solvay Workshop on "Higher Spin Gauge theories, topological field theory and deformation quantization**, *Université Libre de Bruxelles*, Bruxelles (Belgium).

Advisory experience:

- 2020 **Marija Turk**, *Memory effects in classical electrodynamics*, BSc. thesis.
- 2021 **Matea Pešut**, *Linear operators and applications in physics*, BSc. thesis.
- 2021 **Filip Padežanin**, *Noether's theorems*, BSc. thesis.
- 2022 **Mihael Banožić**, *Theorem of Ostrogradsky*, BSc. thesis.
- 2022 **Filip Pavun**, *Hidden symmetries in Kepler's problem*, BSc. thesis.

Interests

Higher spin theories, gravity

Conferences, talks and posters

- Jul 2014 **Physics and Philosophy 2014 Workshop**, *Split*, 'A Few Good Examples why to Refute Classical Logic in Quantum Mechanics', dr. sc. Lovre Grisogono and Mateo Paulišić .
Lecture, 30 minutes
- Jun 2021 **XIV. International Workshop LIE THEORY AND ITS APPLICATIONS IN PHYSICS**, *Bulgarian Academy of Sciences, Institute for Nuclear Research and Nuclear Energy*, Sofia, Bulgaria, "Gauging the higher-spin-like symmetries by the Moyal product".
Lecture, 20 minutes
- Sep 2021 **Thematic programme "Geometry for Higher Spin Gravity: Conformal Structures, PDEs, and Q-manifolds"**, *Erwin Schrödinger International Institute for Mathematics and Physics*, Vienna (Austria), "Gauging HS-like symmetries using the Moyal product" - M. Paulišić, I. Vuković.
Poster presentation

Publications

- 2018 L. Bonora, M. Cvitan, P. Dominis Prester, S. Giaccari, M. Paulišić, and T. Štemberga. Axial gravity: a non-perturbative approach to split anomalies. *Eur. Phys. J. C*, 78(8):652, 2018.
- 2018 L. Bonora, M. Cvitan, P. Dominis Prester, S. Giaccari, M. Paulišić, and T. Štemberga. Worldline quantization of field theory, effective actions and L-infinity structure. *JHEP*, 04:095, 2018.

- 2021 Maro Cvitan, Predrag Dominis Prester, Stefano Giaccari, Mateo Paulišić, and Ivan Vuković. Gauging the higher-spin-like symmetries by the Moyal product. JHEP, 06:144, 2021.
- 2021 Cvitan M, Prester Dominis P, Giaccari SG, Paulišić M, Vuković I. Gauging the Higher-Spin-Like Symmetries by the Moyal Product. II. Symmetry. 2021; 13(9):1581.
- 2023 Cvitan M, Prester Dominis P, Giaccari SG, Paulišić M, Vuković I. Gauging Higher-Spin-Like Symmetries using the Moyal Product. Chapter and conference paper, LT 2021: Lie Theory and Its Applications in Physics pp 463–469

Hobbies

Singing (honored to have been a part of klapa Teran, klapa Pižolot and klapa Pinguentum), cooking, indoor-boulder climbing, tabletop role-playing games

Languages

Croatian Mother tongue
English Fluent
German Basic