

# Filip Požar

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🏠 14th September 1998

## EDUCATION

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- Mathematical gymnasium diploma, XV Gimnazija - MIOC Zagreb  
● GPA 4.8 2013-2017
- University of Zagreb, Faculty of Science: Physics department Zagreb  
● Master of Science in Physics: GPA 4.72/5.00, ECTS 357/300 Sep. 2017 - Oct. 2022
- University of Zagreb, Faculty of Science: Physics department Zagreb  
● PhD Student enrolled in the Elementary Particle Physics program Sep. 2023 -

## WORK

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- Institute Ruđer Bošković Zagreb  
● Assistant at the Division of Theoretical Physics, working for the Quantum Gravity and Mathematical Physics Group Apr. 2023 -

## CONFERENCES, WORKSHOPS AND SCHOOLS

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- Workshop: Quantum Aspects of Spacetime and Gravity Zagreb  
Institute Ruđer Bošković September 5-9 2022  
● I have attended the workshop at the Institute Ruđer Bošković in Zagreb, organized by my mentor dr.sc. Tajron Jurić. [Link to the workshop's site](#)
- Sarajevo School of High Energy Physics 2022 Sarajevo  
University of Sarajevo October 10-15 2022  
● I have attended the school at the Faculty of Science in Sarajevo, organized by University of Sarajevo and CERN. [Link to the schools's site](#)
59. Winter School of Theoretical Physics and third COST Action CA18108 Jelenia Gora  
Training School "Gravity – Classical, Quantum and Phenomenology"  
Institute of Theoretical Physics of the University of Wroclaw, Poland February 12-21 2023  
● Here I held a 20 minute student talk about my first scientific paper. [Link to the schools's site](#)
- Basics of Quantum Gravity 2023 Online  
Online via Zoom May 16 - November 16 2023  
● I have attended the online school "Basics of Quantum Gravity". [Link to the schools's site](#)
- Mini symposium on Physics and Geometry 2023 Zagreb  
Institute Ruđer Bošković June 5-9 2023  
● I have attended the conference "Mini symposium on Physics and Geometry" organized by Athanasios Chatzistavrakidis (RBI), Larisa Jonke (RBI), Jan Rosseel (RBI).  
Here I held a 20 minute presentation. [Link to the conference's site](#)
- Emergent Geometries from Strings and Quantum Fields 2023 Florence  
Galileo Galilei Institute June 12-16 2023  
● I have attended the school organized by Francesco Bonechi.  
Here I held a 5 minute gong presentation. [Link to the schools's site](#)

- COST CA18108 Fourth Annual Conference 2023 Rijeka  
 University of Rijeka, Faculty of Physics July 10-14 2023
- I have attended the conference organized by Tomislav Terzić and others. Here I held a 20 minute seminar presentation. [Link to the conference's site](#)
- XXV SIGRAV Conference on General Relativity and Gravitation Trieste  
 SISSA September 4-8 2023
- I have attended the conference organized by SIGRAV comitee. Here I held a 20 minute seminar presentation. [Link to the conference's site](#)
- Golden Wedding of Black Holes and Thermodynamics Online  
 Online via Zoom December 4-8 2023
- I have attended the conference organized by Níckolas de Aguiar Alves and others. I held a 30 minute seminar presentation. [Link to the conference's site](#)
- 44th Winter School Geometry And Physics Srni  
 Masaryk University January 13-20 2024
- I have attended the school organized by Masaryk University, Union of Czech Mathematicians and Physicists and Charles University. Here I held a 25 minute seminar presentation. [Link to the conference's site](#)
- School on Field theory and applications in HEP Thessaloniki  
 Aristotel University June 09 - 16 2024
- I have attended the school funded by SEENET, MTP, CERN and ICTP. Here I held a 7 minute seminar presentation. [Link to the school's site](#)

## TALKS

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I have held presentations/seminars on the following occasions:

- 59. Winter School of Theoretical Physics and third COST Action CA18108 Training School "Gravity – Classical, Quantum and Phenomenology" ([Quantum correction to black hole entropy](#))
- Mini symposium on Physics and Geometry 2023 ([Area law in NC geometry](#))
- Emergent Geometries from Strings and Quantum Fields 2023 ([Quantum aspects of BH entropy](#))
- COST CA18108 Fourth Annual Conference 2023 ([Noncommutativity and black hole entropy](#))
- XXV SIGRAV Conference on General Relativity and Gravitation ([Noncommutative Corrections to Black Hole Entropy](#))
- Golden Wedding of Black Holes and Thermodynamics ([Noncommutative correction to black hole entropy](#) )
- 44th Winter School Geometry And Physics ([Noncommutative corrections to black hole entropy](#))
- School on Field theory and applications in HEP ([Twisted Hopf algebra modules are also twisted](#))

## SCIENTIFIC VISITS

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SISSA, Trieste :

- 01 April 2024 - 01 May 2024
- Funded by Ruđer Bošković Institute's MZ2-24 grant, I have visited prof. Ludwik Dabrowski's group at SISSA for a month long visit where we have worked on the algebraic computation of the torsion tensor in the spectral triple approach to NC geometry.

IJCLab Saclay, Paris :

- 01 October 2024 - 31 October 2024
- Funded by Cogito France and French Government grant, I have visited prof. JC Wallet's group at Paris Saclay University for a month long visit where we have worked on the convolution star product realization for T-Minkowski spacetimes and their deformed Poincare algebras.

## ARTICLES, THESIS

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Entropy of black holes, charged probes and noncommutative generalization (article) [InspireHEP](#)  
Institute Ruđer Bošković, Zagreb July 2024

- I have generalized a famous result for calculating the entropy of any dimensional black holes using a free scalar field to the case of charged black holes and charged scalar fields coupled to black hole's electromagnetic field. Additionally, I have provided expressions for calculating the entropy of noncommutatively generalized such systems.

Noncommutative correction to the entropy of charged BTZ black hole (article) [InspireHEP](#)  
Institute Ruđer Bošković, Zagreb December 2022

- I have calculated the entropy of a charged BTZ black hole and its corrections due to angular Drinfeld twist in the expansion of the noncommutative parameter  $a$ .

The Geometry of Standard Model (Master's project) [Link](#)  
Faculty of Science - Physics department September 2022

- I have developed the formalism of principal and associated bundles, spin structure and geometry on bundles and applied them in order to describe the Standard Model Lagrangian in a geometrical, coordinate free manner.

## HONOURS AND AWARDS

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- 2017-2020: Full STEM scholarship for bachelor's STEM students (funded by EU and Croatian Ministry of Science and Education).
- 2024: French Government scholarship for a scientific visit of 1 month to Paris.