



Guilherme SADOVSKI

PERSONAL DATA

NAME: Guilherme Sadovski
PLACE OF BIRTH: Salvador, Bahia, Brazil
WEBSITE: gsadovski.github.io

EDUCATION

- 2019 – 2015 Ph.D. in PHYSICS, **Universidade Federal Fluminense (UFF)**, Niterói, Brazil.
Thesis: *“A renormalizable topological quantum field theory for gravity”*.
Advisor: Prof. Dr. Rodrigo Ferreira SOBREIRO.
- Winter 2017 Visiting Ph.D. student at **Centro de Estudios Científicos (CECs)**, Valdivia, Chile.
Supervisor: Prof. Dr. Jorge ZANELLI.
- 2015 – 2013 Master of Science in PHYSICS, **Universidade Federal Fluminense (UFF)**, Niterói, Brazil.
Dissertation: *“Cosmology of a gauge theory modified for gravity”*.
Advisor: Prof. Dr. Rodrigo Ferreira SOBREIRO.
- 2013 – 2008 Bachelor’s degree in PHYSICS, **Universidade Estadual de Feira de Santana (UEFS)**, Brazil.
Monograph: *“On the covariance of physical laws”*.
Advisor: Prof. Dr. Milton Souza RIBEIRO.
- FALL 2011 Visiting student at **Instituto Superior Técnico (IST)**, Lisbon, Portugal.

LANGUAGES

PORTUGUESE: Mother-tongue
ENGLISH: Fluent
SPANISH: Moderate
JAPANESE: Basic

COMPUTER SKILLS

Basic Knowledge: C/C++, Scilab, Sagemath Access.
Intermediate Knowledge: Mathematica, OriginLab.
Advanced Knowledge: \LaTeX , Markdown, GNU/LINUX, GNUPlot.

EMPLOYMENTS

- 2024 – 2022 Postdoctoral Scholar at HENAN UNIVERSITY, Kaifeng, China (full time)
School of Mathematics and Statistics
Researcher mainly working with global features of the spacetime manifold in the classical and quantum realm.
- 2022 – 2019 Postdoctoral Scholar at OKINAWA INSTITUTE OF SCIENCE AND TECHNOLOGY, Okinawa, Japan (full time)
Gravity, Quantum Geometry and Field Theory Unit
Researcher mainly working with global features of the spacetime manifold in the classical and quantum realm.
- 2015 – 2016 Tutor at UNIVERSIDADE FEDERAL FLUMINENSE, Niterói, Brazil (20hs/week)
Institute of Physics
Exercise classes in Newtonian Mechanics, Linear Algebra, Calculus, for first-year students of the Physics undergraduate program.
- 2013 – 2015 Tutor at UNIVERSIDADE FEDERAL FLUMINENSE, Niterói, Brazil (20hs/week)
School of Engineering
Exercise classes in differential and integral calculus for students in the Environmental Engineering undergraduate program.

SCHOLARSHIPS

- 2019 – 2018 Ph.D. Scholarship funded by CAPES.
- WINTER 2017 Ph.D. Scholarship for students visiting foreign institutions funded by CAPES.
- 2017 – 2015 Ph.D. Scholarship funded by CAPES.
- 2015 – 2013 M.Sc. Scholarship funded by CAPES.
- FALL 2011 Scholarship for exchanged students funded by UEFS.
- 2011-2009 Scientific Initiation Scholarship for undergrad students funded by UEFS.

JOURNAL REVIEWER

- Classical and Quantum Gravity;
- Physical Review D;
- International Journal of Geometric Methods in Modern Physics.
- Journal of Physics G
- Physica Scripta

RESEARCH INTERESTS

- GR-QC: Modified theories of gravity, gauge theories of gravity, topological gravity; quantum gravity, spacetime topology.
- HEP-TH: Topological quantum field theories, twisted supersymmetries; non-Abelian gauge theories, quantum stability, anomalies, Gribov problem.
- MATH-PHYS: Matrix models, tensor models, group field theories; theory of connections, moduli.

PUBLICATIONS

1. G. Sadovski and R. F. Sobreiro. *Topological symmetry-restored phase of gravity*. May 2024. arXiv: [2405.02884 \[gr-qc\]](#)

2. G. Sadovski. “About the (in)equivalence between holonomic versus non-holonomic theories of gravity”. In: *International Journal of Geometric Methods in Modern Physics* 0.0 (Sept. 2024). DOI: [10.1142/S0219887825500045](https://doi.org/10.1142/S0219887825500045). arXiv: [2207.05721](https://arxiv.org/abs/2207.05721) [gr-qc]
3. D. Dudal, C. P. Felix, O. C. Junqueira, et al. “Infinitesimal Gribov copies in gauge-fixed topological Yang-Mills theories”. In: *Physical Letters B* 807 (Aug. 2020), p. 135531. DOI: [10.1016/j.physletb.2020.135531](https://doi.org/10.1016/j.physletb.2020.135531). arXiv: [1907.05460](https://arxiv.org/abs/1907.05460) [hep-th]
4. O. C. Junqueira, A. D. Pereira, G. Sadovski, et al. “More about the renormalization properties of topological Yang-Mills theories”. In: *Physical Review D* 98.10–15 (Nov. 2018), p. 105017. DOI: [10.1103/PhysRevD.98.105017](https://doi.org/10.1103/PhysRevD.98.105017). arXiv: [1807.01517](https://arxiv.org/abs/1807.01517) [hep-th]
5. O. C. Junqueira, A. D. Pereira, G. Sadovski, et al. “Absence of radiative corrections in four-dimensional topological Yang-Mills theories”. In: *Physical Review D* 98.2 (July 2018), 021701(R). DOI: [10.1103/PhysRevD.98.021701](https://doi.org/10.1103/PhysRevD.98.021701). arXiv: [1805.01850](https://arxiv.org/abs/1805.01850) [hep-th]
6. O. C. Junqueira, A. D. Pereira, G. Sadovski, et al. “Equivalence between the Lovelock-Cartan action and a constrained gauge theory”. In: *European Physical Journal C* 77.4 (Apr. 2017), p. 249. DOI: [10.1140/epjc/s10052-017-4820-y](https://doi.org/10.1140/epjc/s10052-017-4820-y). arXiv: [1612.05590](https://arxiv.org/abs/1612.05590) [hep-th]
7. F. T. Falciano, G. Sadovski, R. F. Sobreiro, et al. “Cosmology from a gauge induced gravity”. In: *General Relativity and Gravitation* 49.9 (Aug. 2015), p. 118. DOI: [10.1007/s10714-017-2282-z](https://doi.org/10.1007/s10714-017-2282-z). arXiv: [1508.04329](https://arxiv.org/abs/1508.04329) [gr-qc]
8. O. C. Junqueira, A. D. Pereira, G. Sadovski, et al. “Topological Yang-Mills theories in self-dual and anti-self-dual Landau gauges revisited”. In: *Physical Review D* 96.8 (Oct. 2017), p. 085008. DOI: [10.1103/PhysRevD.96.085008](https://doi.org/10.1103/PhysRevD.96.085008). arXiv: [1707.06666](https://arxiv.org/abs/1707.06666) [hep-th]

EVENTS & TALKS

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| 2023 | <p>Weekly seminar, HENU, Kaifeng, China.
 Talk: “About the (in)equivalence between holonomic versus non-holonomic theories of gravity”</p> <p>Weekly seminar, HENU, Kaifeng, China.
 Talk: “Scalar-tensor theories of gravity”</p> <p>Conference 2023: Instanton, Holography, Strong Interactions and Nuclear Physics, HENU, Kaifeng, China [website].</p> |
| 2022 | <p>Invited seminar, OIST, Okinawa Japan.
 Talk: “Tropical algebraic geometry” [recording]</p> <p>Invited seminar, OIST, Okinawa Japan.
 Talk: “Tropical arithmetics” [recording]</p> |
| 2021 | <p>Workshop, Regular black holes in quantum gravity and beyond: from theory to shadow observations, via Zoom [website].</p> <p>Workshop, Black holes inside and out, via Zoom [website].</p> <p>Workshop, First International Society for Quantum Gravity Meeting, via Zoom [website].</p> <p>Invited Seminar, Heriot-Watt U., Edinburgh, UK.
 Talk: “Exotic smoothness and physics”</p> |
| 2020 | <p>Invited Seminar, OIST, Okinawa, Japan.
 Talk: “Why is the world four-dimensional?”</p> <p>Invited Seminar, UFOB, Bahia, Brazil.
 Talk: “Porque o mundo é quadri-dimensional?”</p> <p>Workshop, Quantum gravity meets dark energy, via Zoom.</p> <p>Workshop, Recent developments in quantum gravity, via Zoom.</p> |

- 4th Bangkok Workshop on Discrete Geometry, Dynamics and Statistics, Chulalongkorn University, Bangkok, Thailand [[website](#)].
- 2019 | Workshop, Quantum and Gravity in Okinawa, OIST, Okinawa, Japan [[website](#)].
Talk: *"A renormalizable topological quantum field theory for gravity"*
- 2018 | V Carioca Meeting of Cosmology and Gravitation, UFF, Niterói, Brazil.
Talk: *"(In-)equivalence between two distinct formulations of gravity theories"*.
XVII Brazilian School of Cosmology and Gravitation, CBPF, Rio de Janeiro, Brazil.
XXXIX National Meeting of Field and Particle Physics, São Paulo, Brazil.
Talk: *"Perturbative renormalizability of a topological phase of gravity"*.
- 2017 | Lunch Seminar, CECs, Valdivia, Chile.
Talk: *"Monopoles, wormholes and their possible relation"*.
- 2016 | IV Carioca Meeting of Cosmology and Gravitation, ON, Rio de Janeiro, Brazil.
- 2015 | V National Workshop of Quantum Field Theory, Rio de Janeiro, Brazil.
XXXVI National Meeting of Field and Particle Physics, Minas Gerais, Brazil.
Theoretical Frontiers in Black Holes and Cosmology, IIP, Natal, Brazil.
Talk: *"Cosmology of a Yang-Mills theory modified for gravity"*.
X School of CBPF, CBPF, Rio de Janeiro, Brazil.
III Carioca Meeting of Cosmology and Gravitation, UFRJ, Rio de Janeiro, Brazil.
- 2014 | IV National Workshop of Quantum Field Theory, UFMA, Maranhão, Brazil.
Talk: *"Cosmology of a Yang-Mills theory modified for gravity"*
XXXV National Meeting of Field and Particle Physics, Minas Gerais, Brazil
Talk: *"Cosmology of a gauge theory modified for gravity"*
Invited talk at Fluminense Federal University, Rio de Janeiro, Brazil
Talk: *"Differential Geometry and Maxwell's Equations"*
- 2012 | VI Inner Seminar of Research and Extension, UEFS, Bahia, Brazil
Talk: *"On the covariance of physical laws"*
XXVII Journey of Theoretical Physics, IFT-UNESP, São Paulo, Brazil
- 2010 | XIV Seminar of Scientific Initiation, UEFS, Bahia, Brazil
Talk: *"Maxwell's equations and Spacetime"*
VIII School of CBPF, CBPF, Rio de Janeiro, Brazil
XIII Physics Week of UEFS, UEFS, Bahia, Brazil
Poster: *"Maxwell's equations and Spacetime"*
- 2009 | XXVII Meeting of Physicist from North and Northeast, Pará, Brazil
XII Physics Week of UEFS, Bahia, Brazil