

CURICULUM VITAE

GUSTAVO DOTTI

(Last updated November 2018)

UNC: National University of Córdoba, Argentina.

FaMAF: Department of Mathematics, Astronomy and Physics at UNC.

UCSD: University of California at San Diego (California, USA).

CONICET: National Research Council for Science and Technology, Argentina.

PERSONAL INFORMATION

Name: Gustavo Daniel Dotti.

Work Address: FaMAF, Universidad Nacional de Córdoba, Ciudad Universitaria (5000) Córdoba, Argentina.

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EDUCATION

Licenciado en Física, UNC, September 1990.

M.Sc. in Physics UCSD, September 1994.

Ph.D. in Physics UCSD, March 1998.

POSITIONS HELD

Current:

01.11.10-: Independent Researcher of CONICET.

01.08.11-: Professor, Universidad Nacional de Córdoba (Argentina).

Previous:

01.09.93-31.03.98: Teaching Assistant, UCSD Physics Department.

01.08.96-31.03.98: Research Assistant, UCSD Physics Department.

01.04.98-30.06.04: Teaching Assistant, UNC.

01.04.98-31.12.99: Adjunct Professor, Universidad Tecnológica Nacional (UTN).

01.10.99-31.12.04: Assistant Researcher, CONICET.

01.03.02-31.12.04: Adjunct Professor, Instituto Universitario Aeronáutico (IUA).

01.07.04-31.07.11: Adjunct Professor, UNC.

01.01.05-31.10.10: Adjunct Researcher, CONICET.

TEACHING EXPERIENCE

UNC: undergraduate and graduate Physics courses, Calculus for Chemistry and Economics majors.

UCSD: undergraduate and graduate Physics courses

Universidad Tecnológica Nacional: Calculus for Management, Physics for Engineering.

Instituto Universitario Aeronáutico: Calculus for Engineering.

RESEARCH INTERESTS

Gravitation and gauge theories. Current interest is focused on stability of stationary black holes, naked singularities and other solutions of General Relativity with causal pathologies.

PUBLICATIONS (excluding conference proceedings)

For updates and statistics check the arXiv

1. *Instability of asymptotically anti de Sitter black holes under Robin conditions at the timelike boundary*, B. Araneda and G. Dotti, arXiv:1611.03534 [hep-th], Phys.Rev.D **D96** 104029 (2017).
2. *Black hole nonmodal linear stability under odd perturbations: The Reissner Nordström case*, Julián M. Fernández Tío and Gustavo Dotti, Phys. Rev. D **95** 124041 (2017) [arXiv:1607.00975 [gr-qc]].
3. *Black hole nonmodal linear stability: the Schwarzschild (A)dS cases*, G. Dotti, Class. Quant. Grav. **33**, no. 20, 205005 (2016), [arXiv:1603.03749 [gr-qc]].
("CQG highlights 2016 in Mathematical Relativity", <http://iopscience.iop.org/journal/0264-9381/page/Highlights-2016>)
4. *Strong cosmic censorship and Misner spacetime*, P. Denaro and G. Dotti, arXiv:1505.01092 [gr-qc], Phys. Rev. D **92** (2015) 2, 024017.
5. *Petrov type of linearly perturbed type D spacetimes*, B. Araneda and G. Dotti, arXiv:1502.07153 [gr-qc]. Class. Quant. Grav. **32** (2015) 19, 195013.
6. *Nonmodal linear stability of the Schwarzschild black hole*, G.Dotti, Phys.Rev.Lett. **112** (2014) 191101, arXiv:1307.3340 [gr-qc].
7. S. Dain and G. Dotti, *The wave equation on the extreme Reissner-Nordström black hole*, Class.Quant.Grav. **30** (2013) 055011, arXiv:1209.0213 [gr-qc].
8. *Unstable Fields in Kerr Spacetimes*, G. Dotti, R. J. Gleiser and I. F. Ranea-Sandoval, arXiv:1111.6854 [gr-qc], Class. Quant. Grav. **29**, 095017 (2012).
9. *Static solutions with nontrivial boundaries for the Einstein-Gauss-Bonnet theory in vacuum*, G. Dotti, J. Oliva and R. Troncoso, arXiv:1004.5287. Phys.Rev. **D 82**, 024002 (2010)
10. *Gravitational instability of the inner static region of a Reissner-Nördstrom black hole*, G. Dotti y R. J. Gleiser, arXiv:1001.0152, Class. Quant. Grav. **27**, 185007 (2010)
11. *The initial value problem for linearized gravitational perturbations of the Schwarzschild naked singularity*, G. Dotti and R. J. Gleiser, Class. Quant. Grav. **25** 215002 (2009), arXiv:0809.3615 [gr-qc].
12. *Gravitational instabilities in Kerr space times*, G. Dotti, R. J. Gleiser, I. F. Ranea-Sandoval and H. Vucetich, Class. Quant. Grav. **25**:245012 (2008), arXiv:0805.4306 [gr-qc].
13. *Static black hole solutions with a self interacting conformally coupled scalar field*, G. Dotti, C. Martinez and R. J Gleiser, Phys.Rev. **D 77**:104035, (2008), arXiv:0710.1735 [hep-th].
14. *Exact solutions for the Einstein-Gauss-Bonnet theory in five dimensions: Black holes, wormholes and spacetime horns*, G. Dotti, J. Oliva and R. Troncoso, Phys.Rev. **D 76**:064038, (2007) arXiv:0706.1830 [hep-th].
15. *Gravitational instability of static spherically symmetric Einstein-Gauss-Bonnet black holes in five and six dimensions*, M. Beroiz, G. Dotti y R.J. Gleiser, Phys.Rev. **D 76**, 024012 (2007), hep-th/0703074.
16. *Static wormhole solution for higher-dimensional gravity in vacuum*, G. Dotti, J. Oliva y R. Troncoso; Phys.Rev. **D75** 024002, (2007), hep-th/0607062.
17. *Instability of charged and rotating naked singularities*, G. Dotti, R. J. Gleiser, J. Pullin; Phys. Lett. **B 644**, 289 (2006), gr-qc 0607052.
18. *Instability of the negative mass Schwarzschild naked singularity*, R.J. Gleiser y G.Dotti, Class. Quant. Grav. **23** (2006), 5063, gr-qc/0604021.
19. *Linear stability of Einstein-Gauss-Bonnet static spacetimes: vector and scalar perturbations*, R.J. Gleiser y G.Dotti, Phys.Rev. **D 72** (2005) 124002, gr-qc/0510069.
20. *Obstructions on the horizon geometry from string theory corrections to Einstein gravity*, G. Dotti y R.J. Gleiser, Phys. Lett. **B 627** (2005), 174, hep-th/0508118.

21. *Plane fronted gravitational waves in Lovelock-Yang-Mills theory*, R. J. Gleiser y Gustavo Dotti, Phys.Rev.D **71** (2005) 124029, gr-qc/0505094.
22. *Linear stability of Einstein-Gauss-Bonnet static spacetimes: Tensor perturbations*, G. Dotti y R. J. Gleiser, Phys.Rev. **D72** 044018 (2005), gr-qc/0503117.
23. *Gravitational instability of Einstein-Gauss-Bonnet black holes under tensor mode perturbations*, G. Dotti y R. J. Gleiser, *Class. Quant. Grav.* **22** (2005), L1, gr-qc/0409005.
24. *Topology of quantum modified moduli spaces*, G.Dotti, JHEP 0308:023 (2003), hep-th/0306264.
25. *Remarks on Experimental Bounds to QG Effects on Fermions*, G.Dotti y R.Gleiser, Phys.Rev.D67:101501 (2003) gr-qc/0302086.
26. *Discrete anomalies and the null cone of SYM theories*, G.Dotti, Phys. Lett. B567 (2003) 315, hep-th/0207151.
27. *Higgs Mechanism and Luna strata in $\mathcal{N} = 1$ gauge theories*, G. Dotti, Nuclear Physics **B 591** (2000), 636, hep-th/0006188.
28. *Non-supersymmetric vacua and the D-flatness condition*, G. Dotti, Nuclear Physics **B 558** (1999), 573, hep-th/9905052.
29. *Supersymmetric gauge theories with a free algebra of invariants*, G. Dotti, A. Manohar y W. Skiba, Nuclear Physics **B 531** (1998), 507, hep-th/9803087.
30. *Supersymmetric gauge theories with an affine quantum moduli space*, G. Dotti y A. Manohar, Phys. Rev. Letters 80,2758 (1998), hep-th/9712010.
31. *Anomaly matching conditions and the moduli space of supersymmetric gauge theories*, G. Dotti y A. Manohar, Nuclear Physics **B 518** (1998), 575, hep-th/9710024.
32. *'t Hooft conditions in supersymmetric dual theories*, G. Dotti, Phys. Lett. **B 417** (1998), 275, hep-th/9709161.
33. *Anomaly matching conditions in supersymmetric gauge theories*, G.Dotti y A.Manohar, Phys. Lett. **B 410** (1997), 167, hep-th/9706075.
34. *Self dual Maxwell fields on curved spacetimes*, G.Dotti y C.Kozameh, Journal of Math. Phys. **37** (1996), 3833.

SCIENTIFIC MEETINGS

1. *IV José Plínio Baptista School on Cosmology (Gravitational Waves)*, Pedra Azul, Domingos Martins, ES, Brazil, October 15-19, 2018 (invited speaker).
2. *IV CosmoSul - Cosmology and Gravitation in the Southern Cone*, São Paulo, Brazil, 31.07-02.08.17 (plenary talk).
3. *Grav17*, Conference on Gravitation, La Falda, Argentina, 03-07.04.17.
4. *21st International Conference on General Relativity and Gravitation*, New York, USA, 11-15.07.16 (contributed talk).
5. *Spacetimes with anisotropic scaling symmetry and holography*, Viña del Mar, Chile, 11-15.01.16.
6. *Grav15*, Conference on Gravitation, La Falda, Argentina, 13-17.04.15.
7. *GravUACH 2015*, Gravitation at the Universidad Austral de Chile, Valdivia, Chile, 01.2015 (invited speaker).
8. *GravUACH 2014*, Gravitation at the Universidad Austral de Chile, Valdivia, Chile, 01.2014 (invited speaker).
9. *19th International Conference on General Relativity and Gravitation*, Warsaw, Poland, 07-12.07.13 (contributed talk).
10. *Grav13*, Conference on Gravitation, Villa General Belgrano, Argentina, 15-19.04.13.

11. *Relativity and Gravitation, 100 years after Einstein in Prague*, Prague, Czech Republic, 25-29.06.12 (contributed talk)
12. GravUACH 2012, Gravitation at the Universidad Austral de Chile, Valdivia, 19.01.12 (invited speaker).
13. *7th International Conference on gravitation and Cosmology*, Goa India, 14-19.12.11 (contributed talk).
14. *Grav11*, Conference on Gravitation, La Cumbre (Cba, Argentina), 11-15.04.11 (member of the LOC).
15. *Quantum Gravity in the Southern Cone V*, Buenos Aires, 28-30.07.10 (member of the LOC).
16. *19th International Conference on General Relativity and Gravitation*, DF, Mexico, 05-09.07.10 (contributed talk).
17. *Summer Workshop on Theoretical Physics*, CECS, 04-08.01.10 (invited speaker).
18. *Grav09*, Conference on Gravitation, La Falda (Cba, Argentina), 13-17.04.09 (member of the LOC).
19. VII Latin American Symposium on High Energy Physics (SILAFEA), Bariloche, 14-21.01.09 (contributed talk).
20. 93th Annual Meeting of the Argentinian Asociation of Physics, Buenos Aires, 15-19.09.08 (Particles & Fields Division coordinator).
21. *7th Alexander Friedmann International Seminar on Gravitation and Cosmology*, Joao Pessoa, Brasil, 28.06-05.07.08 (contributed talk).
22. *Grav07*, Conference on Gravitation, La Falda (Cba, Argentina), 05-07.11.07 (contributed talk).
23. 92th Annual Meeting of the Argentinian Asociation of Physics, Salta, September 23-27, 2007 (Particles & Fields Division coordinator).
24. *Trends in Theoretical Physics IV*, CEFIMAS, Buenos Aires, 01-05.05.07.
25. 91th Annual Meeting of the Argentinian Asociation of Physics, Merlo (SL, Argentina), 25-29.09.06. (Particles & Fields Division coordinator).
26. *Grav06: Fifty years of FaMAF*, FaMAF-UNC, Córdoba, November 06-10.11.06 (contributed talk).
27. *General Relativity beyond four dimensions*, Kavli Institute of Theoretical Physics, University of California at Santa Barbara 25.01-19.02.06 (contributed talk).
28. *XVI strings@ar meeting*, IAFE-Buenos Aires, September 30th 2005 (contributed talk).
29. 90th Annual Meeting of the Argentinian Asociation of Physics, La Plata (BsAs), September 26-19th 2005 (contributed talk)
30. *Current Problems in Gravitational Physics*, Academia Nacional de Ciencias, Córdoba, April 28-29th 2005 (contributed talk).
31. GR Meeting in honor to Reinaldo Gleiser, La Falda (Cba, Argentina), 20-22.12.04 (contributed talk).
32. *II Encuentro Austral de Física de Partículas, Campos y Astrofísica*, Instituto Balseiro, Bariloche, 24-26.11.04 (contributed talk).
33. *Conference on Fundamental Symmetries and Fundamental Constants*, ICTP (Trieste, Italia), 15-18.09.04.
34. *Isham 60 conference on Quantum Gravity*, Imperial College (London), 06-07.09.04.
35. *VII strings@ar meeting*, La Plata (Argentina), 03.05.0404 (contributed talk).
36. *VIII Argentinian Symposium on Theoretical Physics of Particles and Fields*, Instituto Balseiro, Bariloche, 15-23.01.03 (contributed talk).
37. 87th Annual Meeting of the Argentinian Asociation of Physics, Huerta Grande (Cba), 16-19.09.02. (contributed talk).
38. VI Congreso Dr. A. Monteiro, Bahía Blanca, 04-06.07.01 (contributed talk).

39. *Latin American School on Strings*, LASS 2000, o DF, México, 09-27.10.00.
40. *Spring workshop on superstrings and related matters*, International Centre for Theoretical Physics (ICTP), Trieste, Italia, 27.03-04.04.00.
41. *Quantum Symmetries in Theoretical Physics and Mathematics*, CIMPA school, Instituto Balseiro, Bariloche, 10-21.01.00.
42. XXVII GR meeting, La Falda (Cba, Argentina), 07-10.12.99.
43. Second Conference on Geometric Quantization, Pennsylvania State University, State College, PA, USA, 09.1994.
44. 13th International Conference on General Relativity and Gravitation (Gr13). Huerta Grande (Cba, Argentina), 06.92.
45. Latin American School of Physics (Elaf92). Caxambu, Brasil, 08.92.
46. VII Argentinian Conference on Bioengineering. Vaquerías, (Cba, Argentina) 10.90.

RESEARCH PERIODS OUTSIDE HOME INSTITUTION

- Instituto de Matemática, Facultad de Ciencias, Universidad de la República del Uruguay; Montevideo, Uruguay (18.11.18-24.11.18)
- Cosmo-UFES (Grupo de Cosmología y Gravitación, Universidad Federal Espirito Santo, Vitória, Brasil) (20.05.18-27.05.18).
- CBPF (Centro Brasileiro de Pesquisas Fisicas), Rio de Janeiro, Brasil (13.05.18-19.05.18).
- Max Planck Institute for Gravitational Physics (AEI), Potsdam, Alemania (01.07.12-12.07.12).
- Grupo de Gravitación, Universidad Austral de Chile, (16.01.12-21.01.12).
- Max Planck Institute for Gravitational Physics (AEI), Potsdam, Alemania (06.08.09-23.08.09).
- CECS (Centro de Estudios Científicos), Valdivia, Chile (13.01.08-21.01.08).
- KITP (Kavli Institute for Theoretical Physics), Santa Barbara, California, USA (25.01.06-19.02.06).
- CECS (Centro de Estudios Científicos), Valdivia, Chile (29.10.05-04.11.05).

FUNDING

Currently director of 3-year grant from CONICET involving 5 researchers and their students.

STUDENTS MENTORED

Ph.D Thesis:

- Bernardo Araneda (2014-2018), Ph.D thesis defense date: May 11th, 2018, Universidad Nacional de Córdoba (Argentina).
- Ignacio Ranea Sandoval, Ph.D thesis defense date: Mar 13th 2014, Universidad Nacional de La Plata (Argentina). Currently a Researcher of CONICET.

Licenciatura project (one-year long research project within the five year *Licenciatura* in Physics program at FaMAF-UNC): 8 students since 2002.

ADMINISTRATION AND EVALUATION

- Representative of the International Union of Pure and Applied Physics (IUPAP) on the ISGRG (International Society of General Relativity and Gravitation) since October 2016 (six year term)
- Elected member of the board of the joint UNC-CONICET Physics Institute *Enrique Gaviola* since 2016.
- Secretary of Science and Technology of FaMAF-UNC 01.08.09-30.06.11
- Member of the Academic Committee to appoint Researchers of CONICET, area Physics, (2015-2016)
- Member of the Academic Committee to assign doctoral and postdoctoral fellowships of CONICET, area Physics (three biannual periods).
- Consultant of grant projects of Conicyt (National Research Council of Chile) in two opportunities.
- Referee for *Nuclear Physics B*, *Classical and Quantum Gravity*, *Physical Review D*, *JHEP*, *IJMPD*, *Europhysics Letters*, *IJMPD* and *Physica Scripta*.
- Reviewer for *Mathematical Reviews* (American Mathematical Society)