

Justin C. Feng

Curriculum Vitae

Instituto Superior Técnico
Departamento de Física / CENTRA
Av. Rovisco Pais 1
1049-001 Lisboa, PORTUGAL

email: justin.c.feng at tecnico.ulisboa.pt
url: <http://justincfeng.github.io/>

Education

The University of Texas at Austin	AUSTIN, TEXAS
Doctor of Philosophy in Physics	2009 – 2017
Advisor: Richard A. Matzner	
The University of California, Irvine	IRVINE, CALIFORNIA
Bachelor of Science in Physics with a minor in Mathematics (2009)	2004 – 2009
Honors: <i>Sigma Pi Sigma</i>	

Appointments Held

Postdoctoral Researcher (Current)
CENTRA, Instituto Superior Técnico (University of Lisbon)

Adjunct Faculty (Fall 2018)
St. Edward's University

Research Affiliate Postdoctoral Scholar (2017-2018)
Weinberg Theory Group, The University of Texas at Austin

Assistant Instructor (2011-2017)
The University of Texas at Austin

Graduate Research Assistant (Summers 2016, 2017)
Weinberg Theory Group, The University of Texas at Austin

Teaching Assistant (2009-2011, Spring 2015)
The University of Texas at Austin

Undergraduate Research Assistant (Summers 2007, 2008)
University of California, Irvine

Conferences and Talks

Conferences, Workshops, and Schools

- Participant: XXIX Astronomy and Astrophysics National Meeting (ENAA), September 2019, Lisbon Portugal.
- Presenter: GR22/Amaldi13, July 2019, Valencia, Spain
Title: *Can solutions of the almost-Killing equation yield approximate Killing vectors?*
- Participant: SIGRAV Graduate School, XI Edition, "Gravity and the Quantum", June 2014, Como, Italy.
- Participant: 27th Texas Symposium on Relativistic Astrophysics, December 2013, Dallas, TX.
- Presenter: 7th Gulf Coast Gravity Meeting, April 2013, University of Mississippi, Oxford MS.
Title: *Rigid Surfaces in General Relativity*
- Participant: 6th Gulf Coast Gravity Meeting, May 2011, Florida Atlantic University, Boca Raton, FL.
- Participant: Experimental Search for Quantum Gravity Workshop, July 2010, NORDITA, Stockholm, Sweden
- Poster: APS April Meeting, Denver, CO (2009)
Title: *Modeling Inflation with CMB and 21 cm Anisotropy Measurements*

Seminars and Public Talks

- CENTRA seminar chair (Fall 2019 to Spring 2020)

- Seminar Talk: University of Lisbon
Title: *New Class of Generalized Coupling Theories* (Given November 13th, 2019)
 - Seminar Talk: CENTRA, Instituto Superior Técnico (University of Lisbon)
Title: *Weiss Variation in General Relativity* (Given May 16th, 2019)
 - Seminar Talk: Okinawa Institute for Science and Technology
Title: *Temporal Insights from the End of Space* (Given November 14th, 2017)
 - PhD Defense: *Temporal Insights from the End of Space* (Given August 15th, 2017)
 - Participant: Whizkey Seminar (2011-2015)
 - Participant: Differential Geometry Seminar, led by Prof. Larry Shepley, Summer 2011
 - Public Qualifier Talk: *Variations of Area in Geometrodynamics* (Given November 17th, 2011)
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Publications and Works

Articles

- [1] Justin C. Feng. Boundary conditions without boundary conditions for the AdS manifold. Feb 2020. arxiv:2002.08342.
- [2] Justin C. Feng and Sante Carloni. A new class of generalized coupling theories. Oct 2019. arxiv:1910.06978 (To appear in Physical Review D).
- [3] Justin C. Feng, Edgar Gasperín, and Jarrod L. Williams. Almost-killing equation: Stability, hyperbolicity, and black hole gauss law. *Phys. Rev. D*, 100:124034, Dec 2019.
- [4] Chinmoy Bhattacharjee, Justin C. Feng, and S. M. Mahajan. Black hole in a superconducting plasma. *Phys. Rev. D*, 99:024027, Jan 2019.
- [5] Justin C. Feng. Some globally conserved currents from generalized Killing vectors and scalar test fields. *Phys. Rev. D*, 98:104035, Nov 2018.
- [6] Chinmoy Bhattacharjee, Justin C Feng, and David J Stark. Surveying the implications of generalized vortical dynamics in curved spacetime. *Monthly Notices of the Royal Astronomical Society*, page sty2277, 2018.
- [7] Ignazio Ciufolini, Richard A. Matzner, Justin C. Feng, Antonio Paolozzi, David P. Rubincam, Erricos C. Pavlis, John C. Ries, Giampiero Sindoni, and Claudio Paris. A new laser-ranged satellite for General Relativity and space geodesy: IV. Thermal drag and the LARES 2 space experiment. *The European Physical Journal Plus*, 133(8):333, Aug 2018.
- [8] Justin C. Feng. Volume average regularization for the Wheeler-DeWitt equation. *Phys. Rev. D*, 98:026024, Jul 2018.
- [9] Justin Feng, Mark Baumann, Bryton Hall, Joel Doss, Lucas Spencer, and Richard Matzner. PoMiN: A Post-Minkowskian N -body Solver. *The Astrophysical Journal*, 859(2):130, 2018.
- [10] Justin C. Feng and Richard A. Matzner. From path integrals to the Wheeler-DeWitt equation: Time evolution in spacetimes with a spatial boundary. *Phys. Rev. D*, 96:106005, Nov 2017.
- [11] Justin C. Feng and Richard A. Matzner. The Weiss variation of the gravitational action. *General Relativity and Gravitation*, 50(8):99, Jul 2018.

Dissertation

Feng, Justin C., *Temporal Insights from the End of Space* (2017)

Notes

Feng, J. C., *The Poor Man's Introduction to Tensors*, 40 pages (2017)
(https://justincfeng.github.io/Tensors_Poor_Man.pdf)
