

Justin C. Feng | Curriculum Vitae

CENTRA, Instituto Superior Técnico
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Current Position

CENTRA, Instituto Superior Técnico (U. Lisbon) <i>Postdoctoral Researcher</i>	Lisbon, PORTUGAL 2019–
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Research Interests

Physics: General relativity, quantum gravity, variational principles, classical field theory, N-body simulations, modified gravity, cosmology, dynamical systems, wormholes

Education

The University of Texas at Austin <i>Doctor of Philosophy in Physics</i> Advisor: Richard A. Matzner Dissertation: Temporal Insights from the End of Space	Austin, Texas, USA 2009–2017
University of California, Irvine <i>Bachelor of Science in Physics (with minor in Mathematics)</i> Honors: Sigma Pi Sigma	Irvine, California, USA 2004–2009

Past Appointments

Research	
The University of Texas at Austin <i>Research Affiliate Postdoctoral Scholar</i>	Austin, TX, USA 2017–2018
The University of Texas at Austin <i>Graduate Research Assistant</i>	Austin, TX, USA 2016–2017
University of California, Irvine <i>Undergraduate Research Assistant</i>	Irvine, CA, USA 2007–2008
Teaching	
St. Edward's University <i>Adjunct Faculty</i>	Austin, TX, USA 2018 (Fall)
The University of Texas at Austin <i>Assistant Instructor</i>	Austin, TX, USA 2011–2017
The University of Texas at Austin <i>Teaching Assistant</i>	Austin, TX, USA 2009–2011

Activities

CENTRA seminar chair <i>Organized and chaired CENTRA seminar during 2019/2020 academic year</i>	CENTRA - IST (UL) 2019–2020
Discussion leader and organizer: Crash Course in GR <i>(summer seminar aimed at undergraduates)</i>	UT Austin 2015–2016
Organizer and Speaker: An informal introduction to GR <i>(seminar aimed at undergraduates)</i>	UT Austin 2012 (Fall)
Webmaster: Center for Relativity <i>Maintained website until CFR joined theory group</i>	UT Austin 2011–2015
Webmaster: Society of Physics Students (UCI Chapter) <i>Designed and maintained website for UCI chapter of SPS</i>	UC Irvine 2007–2009
Member: Society of Physics Students & American Physical Society <i>Participated in SPS meetings and events (APS membership through SPS)</i>	UC Irvine 2004–2009

Talks, Workshops and Conferences

Seminar: Relativity Seminar, The University of Texas at Austin, Mar. 6 2020
Talk: XII Black Holes Workshop, December 2019, Guimaraes, Portugal
Seminar: Yukawa Institute for Theoretical Physics, Dec. 2 2019, Kyoto, Japan
Talk: JGRG29 (U. Kobe), November 2019, Kobe, Japan
Seminar: University of Lisbon (FCUL), Nov. 13 2019, Lisbon, Portugal
Talk: GR22/Amaldi13, July 2019, Valencia, Spain
Seminar: CENTRA - Instituto Superior Técnico, May 16 2019, Lisbon, Portugal
Talk: ASA, The University of Texas at Austin, Jan. 31 2018
Seminar: Okinawa Institute of Science and Technology, Nov. 14 2017, Okinawa, Japan
PhD Defense Talk: The University of Texas at Austin, Aug. 15 2017
Talk: Theory Group Brown Bag, The University of Texas at Austin, Mar. 30 2017
Talk: Whizkey Seminar, The University of Texas at Austin, Apr. 6 2015
Talk: Whizkey Seminar, The University of Texas at Austin, Dec. 5 2014
Participant: SIGRAV Graduate School, XI Edition, Jun. 2014, Como, Italy
Participant: 27th Texas Symp. Relativ. Astro., Dec. 2013, Dallas, TX.
Talk: 7th Gulf Coast Gravity Meeting (U. Mississippi), April 2013, Oxford MS
Talk: Whizkey Seminar, The University of Texas at Austin, Mar. 25 2012
Qualifying Exam Talk: The University of Texas at Austin, Nov. 17 2011
Participant: 6th Gulf Coast Gravity Meeting (Florida Atlantic U.), May 2011, Boca Raton, FL.
Talk: Whizkey Seminar, The University of Texas at Austin, Oct. 30 2011
Talks (contributed four): Diff. Geom. Seminar, The University of Texas at Austin, Summer 2011
Participant: ESQG Workshop (NORDITA), Jul. 2010, Stockholm, Sweden
Poster: APS April Meeting, Denver, CO (2009)

Publications

- [1] Chinmoy Bhattacharjee and Justin C. Feng. On beltrami states near black hole event horizon. *Physics of Plasmas*, 27(7):072901, 2020.
- [2] Justin C. Feng. Boundary conditions without boundary conditions for the AdS manifold. Feb 2020. [arxiv:2002.08342](https://arxiv.org/abs/2002.08342).
- [3] Justin C. Feng and Sante Carloni. New class of generalized coupling theories. *Phys. Rev. D*, 101:064002, Mar 2020.
- [4] 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.
- [5] Chinmoy Bhattacharjee, Justin C. Feng, and S. M. Mahajan. Black hole in a superconducting plasma. *Phys. Rev. D*, 99:024027, Jan 2019.
- [6] Justin C. Feng. Some globally conserved currents from generalized Killing vectors and scalar test fields. *Phys. Rev. D*, 98:104035, Nov 2018.
- [7] 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.
- [8] 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.
- [9] Justin C. Feng. Volume average regularization for the Wheeler-DeWitt equation. *Phys. Rev. D*, 98:026024, Jul 2018.
- [10] 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.
- [11] 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.
- [12] Justin C. Feng and Richard A. Matzner. The Weiss variation of the gravitational action. *General Relativity and Gravitation*, 50(8):99, Jul 2018.

Notes

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