

Justin C. Feng | Curriculum Vitae

CENTRA, Instituto Superior Técnico
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Current Position

CENTRA, Instituto Superior Técnico (U. Lisbon)
Postdoc

Lisbon, PORTUGAL
2019–

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
Doctor of Philosophy in Physics
Advisor: Richard A. Matzner

Austin, Texas, USA
2009–2017

University of California, Irvine
Bachelor of Science in Physics (with minor in Mathematics)
Honors: Sigma Pi Sigma

Irvine, California, USA
2004–2009

Past Appointments

Research.....

The University of Texas at Austin
Research Affiliate Postdoc

Austin, TX, USA
2017–2018

The University of Texas at Austin
Grad. Research Assistant

Austin, TX, USA
2016–2017

University of California, Irvine
Undergrad. Research Assistant

Irvine, CA, USA
2007–2008

Teaching.....

St. Edward's University
Adjunct Faculty

Austin, TX, USA
2018 (Fall)

The University of Texas at Austin
Assistant Instructor

Austin, TX, USA
2011–2017

The University of Texas at Austin
Teaching Assistant

Austin, TX, USA
2009–2011

Activities

CENTRA - Instituto Superior Técnico

CENTRA seminar chair 2019–2020

Discussion leader

UT Austin

Crash Course in GR

2015–2016

(summer seminar aimed at undergraduates)

Regular participant

UT Austin

Whizkey Seminar

2011–2015

Organizer

UT Austin

An informal introduction to GR

2012 (Fall)

(seminar aimed at undergraduates)

Regular participant

UT Austin

Differential Geometry Seminar

2011

Talks, Workshops and Conferences

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, Austin, TX

Seminar: Okinawa Institute of Science and Technology, Nov. 14 2017, Okinawa, Japan

PhD Defense Talk: The University of Texas at Austin, Aug. 15 2017, Austin, TX

Talk: Theory Group Brown Bag, The University of Texas at Austin, Mar. 30 2017, Austin, TX

Talk: Whizkey Seminar, The University of Texas at Austin, Apr. 6 2015, Austin, TX

Talk: Whizkey Seminar, The University of Texas at Austin, Dec. 5 2014, Austin, TX

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, Austin, TX

Qualifying Exam Talk: The University of Texas at Austin, Nov. 17 2011, Austin, TX

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, Austin, TX

Participant: ESQG Workshop (NORDITA), Jul. 2010, Stockholm, Sweden

Poster: APS April Meeting, Denver, CO (2009)

Publications

- [1] Justin C. Feng. Boundary conditions without boundary conditions for the AdS manifold. Feb 2020. [arxiv:2002.08342](https://arxiv.org/abs/2002.08342).
- [2] Justin C. Feng and Sante Carloni. New class of generalized coupling theories. Oct 2019. [arxiv:1910.06978](https://arxiv.org/abs/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.

Notes

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