

# Justin C. Feng | CV

CENTRA, Instituto Superior Técnico  
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## Current Position

**CENTRA, Instituto Superior Técnico (U. Lisbon)**  
*Postdoctoral Researcher*

**Lisbon, PORTUGAL**  
2019–

## Research Interests

**Physics:** General relativity, relativistic positioning systems, wormholes, modified gravity

## 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 Postdoctoral Scholar*

**Austin, TX, USA**  
2017–2018

**The University of Texas at Austin**  
*Graduate Research Assistant*

**Austin, TX, USA**  
2016–2017

**University of California, Irvine**  
*Undergraduate 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

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<b>CENTRA seminar chair</b> <i>Organizer and chair for CENTRA seminar</i>	<b>CENTRA - IST (UL)</b> 2019–2021
<b>XIII Black Holes Workshop</b> <i>Organizing Committee Member</i>	<b>CENTRA - IST (UL)</b> 2020 (Dec)
<b>Jury member for MS and PhD evaluation</b> <i>João Rato (MS, 01-2021), Rui André (PhD, 09-2021)</i>	<b>CENTRA - IST (UL)</b>
<b>Discussion leader and organizer: Crash Course in GR</b> <i>(summer seminar aimed at undergraduates)</i>	<b>UT Austin</b> 2015–2016
<b>Organizer and Speaker: An informal introduction to GR</b> <i>(seminar aimed at undergraduates)</i>	<b>UT Austin</b> 2012 (Fall)
<b>Referee</b> <i>Journals: Class. Quantum Grav., Euro. Phys. J. Plus, Comm. Theor. Phys.</i>	

## Talks, Workshops and Conferences

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**Lecture:** 10th School of Astrophysics and Gravitation IST, Sep. 04 2021, Lisbon, Portugal  
**Participant:** GWverse meeting in Lisbon, Sep. 2021, Lisbon, Portugal  
**Seminar:** CENTRA - Instituto Superior Técnico, Jul. 22 2021 (Delivered Online)  
**Seminar:** Università di Bologna, May 28 2021 (Delivered Online)  
**Talk:** XIII Black Holes Workshop, December 2020 (Delivered Online)  
**Talk:** PONT 2020, December 2020 (Delivered Online)  
**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

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- [1] Justin C. Feng, José P. S. Lemos, and Richard A. Matzner. Self-collision of a portal wormhole. *Phys. Rev. D*, 103:124037, Jun 2021.
- [2] Miguel Duarte, Justin Feng, Edgar Gasperín, and David Hilditch. High order asymptotic expansions of a good–bad–ugly wave equation. *Classical and Quantum Gravity*, 38(14):145015, Jun 2021.
- [3] Justin C. Feng, Shinji Mukohyama, and Sante Carloni. Minimal exponential measure model in the post-Newtonian limit. *Phys. Rev. D*, 103:084055, Apr 2021.
- [4] Sumanta Chakraborty and Justin C. Feng. Perturbations of the almost Killing equation and their implications. *Phys. Rev. D*, 103:084020, Apr 2021.
- [5] Chinmoy Bhattacharjee and Justin C. Feng. On beltrami states near black hole event horizon. *Physics of Plasmas*, 27(7):072901, 2020.
- [6] Justin C. Feng and Sante Carloni. New class of generalized coupling theories. *Phys. Rev. D*, 101:064002, Mar 2020.
- [7] Justin C. Feng. Note on gravity at the boundary of an AdS vacuum. Feb 2020. arxiv:2002.08342.
- [8] 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.
- [9] Chinmoy Bhattacharjee, Justin C. Feng, and S. M. Mahajan. Black hole in a superconducting plasma. *Phys. Rev. D*, 99:024027, Jan 2019.
- [10] Justin C. Feng. Some globally conserved currents from generalized Killing vectors and scalar test fields. *Phys. Rev. D*, 98:104035, Nov 2018.
- [11] 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.
- [12] 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.
- [13] Justin C. Feng and Richard A. Matzner. The Weiss variation of the gravitational action. *General Relativity and Gravitation*, 50(8):99, Jul 2018.

- [14] Justin C. Feng. Volume average regularization for the Wheeler-DeWitt equation. *Phys. Rev. D*, 98:026024, Jul 2018.
- [15] 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.
- [16] 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.

## Notes

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