

# Justin C. Feng | Curriculum Vitae

CENTRA, Instituto Superior Técnico  
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## Current Position

<b>CENTRA, Instituto Superior Técnico (U. Lisbon)</b> <i>Postdoctoral Researcher</i>	<b>Lisbon, PORTUGAL</b> 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

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

## Past Appointments

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

## Activities

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<b>CENTRA seminar chair</b> <i>Organized and chaired CENTRA seminar during 2019/2020 academic year</i>	<b>CENTRA - IST (UL)</b> 2019–2020
<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>Webmaster: Center for Relativity</b> <i>Maintained website until CFR joined theory group</i>	<b>UT Austin</b> 2011–2015
<b>Webmaster: Society of Physics Students (UCI Chapter)</b> <i>Designed and maintained website for UCI chapter of SPS</i>	<b>UC Irvine</b> 2007–2009
<b>Member: Society of Physics Students &amp; American Physical Society</b> <i>Participated in SPS meetings and events (APS membership through SPS)</i>	<b>UC Irvine</b> 2004–2009

## Talks, Workshops and Conferences

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**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. Boundary conditions without boundary conditions for the AdS manifold. Feb 2020. [arxiv:2002.08342](#).
- [2] Justin C. Feng and Sante Carloni. New class of generalized coupling theories. *Phys. Rev. D*, 101:064002, Mar 2020.
- [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

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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))