

# JUSTIN C FENG

## CURRICULUM VITAE

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✉ CEICO, FZU - Institute of Physics of the Czech Academy of Sciences, Na Slovance 1999/2, 182 00 Prague 8, Czech Republic

## APPOINTMENTS

### Postdoctoral Researcher

FZU - Institute of Physics of the Czech Academy of Sciences

📅 Sep 2024 – Present

### Junior Fellow

LeCosPA, National Taiwan University

📅 Oct 2023 – Jul 2024

### Postdoctoral Researcher

CENTRA, Instituto Superior Técnico (University of Lisbon)

📅 Feb 2019 – March 2023

### Adjunct Faculty (Joint Appointment)

St. Edward's University

📅 Aug 2018 – Dec 2018

### Research Affiliate - Postdoctoral Fellow

The University of Texas at Austin

📅 Sep 2017 – Jan 2019

### Graduate Research Assistant

The University of Texas at Austin

📅 Jun – Aug 2016, Jun – Aug 2017

### Assistant Instructor

The University of Texas at Austin

📅 Aug 2011 – May 2017

### Teaching Assistant

The University of Texas at Austin

📅 Aug 2009 – Jul 2011, Spring 2015

### Undergraduate Research Assistant

Cooray group, University of California, Irvine

📅 Jun – Aug 2007, Jun – Aug 2008

## EDUCATION

Doctor of Philosophy in Physics

The University of Texas at Austin

📅 Sep 2009 – Dec 2017

Bachelor of Science in Physics

University of California, Irvine

📅 Sep 2004 – Jun 2009

## ACTIVITIES

- Memberships
  - International Society on General Relativity and Gravitation (ISGRG)
  - International Society for Quantum Gravity (ISQG)
- Referee
  - Physical Review D, Classical and Quantum Gravity, Physics Letters B, Annals of Physics, Scientific Reports, European Journal of Physics Plus, etc.
- Organizing committee member
  - LOC, XIII Black Holes Workshop, Dec 2020, Lisbon, PT
  - SOC, ENAA 2023, Sep 2023, Lisbon, PT
- Chair & Organizer
  - CENTRA seminar, 2019-2021, IST, U Lisbon
  - LeCosPA seminar, 2023-2024, LeCosPA, NTU

## SKILLS

### Software

Mathematica (xAct), SciML libraries, Linux

### Programming Languages

Julia, FORTRAN, C, LaTeX, HTML, bash

# PUBLICATIONS

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## Peer-Reviewed Articles

- [1] Reyhan D. Lambaga, Justin C. Feng, Norman Hsia, and Pisin Chen. Dust stars in the minimal exponential measure model. *Phys. Rev. D*, 112(2):024038, 2025.
- [2] Justin C. Feng, Shinji Mukohyama, and Sante Carloni. Emergent Lorentzian dispersion relations from a Euclidean scalar-tensor theory. *Phys. Rev. D*, 112(2):024066, 2025.
- [3] Miguel Duarte, Justin C. Feng, Edgar Gasperín, and David Hilditch. An asymptotic systems approach for the good-bad-ugly model with application to general relativity. *Classical and Quantum Gravity*, 2025.
- [4] Justin C. Feng and Pisin Chen. Cosmological constant as an integration constant. *Eur. Phys. J. C*, 84(12):1331, 2024.
- [5] Soumodeep Mitra, Sumanta Chakraborty, Rodrigo Vicente, and Justin C. Feng. Probing the quantum nature of black holes with ultralight boson environments. *Phys. Rev. D*, 110(8):084012, 2024.
- [6] Justin C. Feng, Shinji Mukohyama, and Sante Carloni. Singularity at the demise of a black hole. *Phys. Rev. D*, 109(2):024040, 2024.
- [7] Justin C. Feng. Smooth metrics can hide thin shells. *Class. Quant. Grav.*, 40(19):197002, 2023.
- [8] Justin Feng and Edgar Gasperin. Linearised conformal Einstein field equations. *Class. Quant. Grav.*, 40(17):175001, 2023.
- [9] Justin C. Feng, Sumanta Chakraborty, and Vitor Cardoso. Shielding a charged black hole. *Phys. Rev. D*, 107(4):044050, 2023.
- [10] Miguel Duarte, Justin Feng, Edgar Gasperin, and David Hilditch. The good-bad-ugly system near spatial infinity on flat spacetime. *Class. Quant. Grav.*, 40(5):055002, 2023.
- [11] Miguel Duarte, Justin C. Feng, Edgar Gasperín, and David Hilditch. Regularizing dual-frame generalized harmonic gauge at null infinity. *Class. Quant. Grav.*, 40(2):025011, 2023.
- [12] Miguel Duarte, Justin C. Feng, Edgar Gasperin, and David Hilditch. Peeling in generalized harmonic gauge. *Class. Quant. Grav.*, 39(21):215003, 2022.
- [13] Justin C. Feng, Filip Hejda, and Sante Carloni. Relativistic location algorithm in curved spacetime. *Phys. Rev. D*, 106:044034, Aug 2022.
- [14] Justin C. Feng, Shinji Mukohyama, and Sante Carloni. Junction conditions and sharp gradients in generalized coupling theories. *Phys. Rev. D*, 105:104036, May 2022.
- [15] Justin C. Feng and Sumanta Chakraborty. Weiss variation for general boundaries. *Gen. Relativ. Gravit.*, 54(67), Jul 2022.
- [16] Justin C. Feng, José P. S. Lemos, and Richard A. Matzner. Self-collision of a portal wormhole. *Phys. Rev. D*, 103:124037, Jun 2021.
- [17] Miguel Duarte, Justin Feng, Edgar Gasperín, and David Hilditch. High order asymptotic expansions of a good-bad-ugly wave equation. *Class. Quantum Gravity*, 38(14):145015, Jun 2021.
- [18] Justin C. Feng, Shinji Mukohyama, and Sante Carloni. Minimal exponential measure model in the post-Newtonian limit. *Phys. Rev. D*, 103:084055, Apr 2021.
- [19] Sumanta Chakraborty and Justin C. Feng. Perturbations of the almost Killing equation and their implications. *Phys. Rev. D*, 103:084020, Apr 2021.
- [20] Chinmoy Bhattacharjee and Justin C. Feng. On Beltrami states near black hole event horizon. *Phys. Plasmas*, 27(7):072901, 2020.
- [21] Justin C. Feng and Sante Carloni. New class of generalized coupling theories. *Phys. Rev. D*, 101:064002, Mar 2020.
- [22] 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.
- [23] Chinmoy Bhattacharjee, Justin C. Feng, and S. M. Mahajan. Black hole in a superconducting plasma. *Phys. Rev. D*, 99:024027, Jan 2019.
- [24] Justin C. Feng. Some globally conserved currents from generalized Killing vectors and scalar test fields. *Phys. Rev. D*, 98:104035, Nov 2018.
- [25] Chinmoy Bhattacharjee, Justin C Feng, and David J Stark. Surveying the implications of generalized vortical dynamics in curved spacetime. *Mon. Notices Royal Astron. Soc.*, page sty2277, 2018.
- [26] 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. *Eur. Phys. J. Plus*, 133(8):333, Aug 2018.
- [27] Justin C. Feng. Volume average regularization for the Wheeler-DeWitt equation. *Phys. Rev. D*, 98:026024, Jul 2018.

- [28] Justin Feng, Mark Baumann, Bryton Hall, Joel Doss, Lucas Spencer, and Richard Matzner. PoMiN: A Post-Minkowskian N -body Solver. *Astrophys. J.*, 859(2):130, 2018.
- [29] Justin C. Feng and Richard A. Matzner. From path integrals to the Wheeler-DeWitt equation: Time evolution in space-times with a spatial boundary. *Phys. Rev. D*, 96:106005, Nov 2017.
- [30] Justin C. Feng and Richard A. Matzner. The Weiss variation of the gravitational action. *Gen. Relativ. Gravit.*, 50(8):99, Jul 2018.

## Dissertation

- [1] Justin Christopher Feng. Temporal insights from the end of space. PhD thesis, 2017.

## Publicly Available Codes

- [1] Justin C. Feng, Filip Hejda, and Sante Carloni. justincfeng/squirrel.jl, Jan 2022. doi:10.5281/zenodo.5850992
- [2] Justin C. Feng, Filip Hejda, and Sante Carloni. justincfeng/cereal.jl, Jan 2022. doi:10.5281/zenodo.5848833
- [3] Justin C. Feng, Mark Baumann, Bryton Hall, Joel Doss, Lucas Spencer, and Richard Matzner. justincfeng/pomin: v1.1.0, Dec 2018. doi:10.5281/zenodo.2224584

## Notes and Misc. Articles

- [1] Justin C. Feng. *Singularity at the demise of a black hole*, Wolfram Community post, staff picks (2024). <https://community.wolfram.com/groups/-/m/t/3123688>
- [2] Justin C. Feng. *Self-collision of a portal wormhole*, Wolfram Community post, staff picks (2021). <https://community.wolfram.com/groups/-/m/t/2286081>
- [3] Justin C. Feng. *The Poor Man's Introduction to Tensors* (2017). [https://justincfeng.github.io/Tensors\\_Poor\\_Man.pdf](https://justincfeng.github.io/Tensors_Poor_Man.pdf)