

Justin Christopher Feng

Curriculum Vitae

The University of Texas at Austin
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Education

2009 BS in Physics with Minor in Mathematics, University of California, Irvine
2009-2017 PhD in Physics, The University of Texas at Austin (*to be conferred December 2017*)
Advisor: Richard A. Matzner

Research Interests

Classical General Relativity	Quantum Gravity	Numerical Relativity
3+1/ADM Formalism	Path Integral Formalism	N-Body Codes
Variational Principles	Quantum Geometrodynamics	Generalized Harmonic Gauge
Boundary Terms	Spatial Boundary Conditions	Future Directions
Modified Gravity		

Appointments held

2009-2011 Teaching Assistant, The University of Texas at Austin
2011-2017 Assistant Instructor, The University of Texas at Austin
2016, 2017 Graduate Research Assistant (summer), The University of Texas at Austin

Teaching Experience

2009-2011 Teaching Assistant: TA for Physics 102M, Physics 303L, and Physics 315
2011-2017 Assistant Instructor: Instructor of Record for Physical Science 303 and Physical Science 304
2012 Lecturer: *An Informal Introduction to General Relativity*, Fall Sem. 2012
2013 Provided Lectures for Graduate Relativity Course (Physics 387M), Fall Sem. 2013
2015 Lecturer: *A Crash Course in General Relativity*, Summer Sem. 2015
2016 Lecturer: *A Crash Course in General Relativity*, Summer Sem. 2016

Conferences and Talks

CONFERENCES, WORKSHOPS, AND SCHOOLS

- 2014 Participant: SIGRAV Graduate School, XI Edition, "Gravity and the Quantum", June 2014, Como, Italy.
- 2013 Participant: 27 th Texas Symposium on Relativistic Astrophysics, December 2013, Dallas, TX.
- 2013 Presenter: 7 th Gulf Coast Gravity Meeting, April 2013, University of Mississippi, Oxford MS., Title: *Rigid Surfaces in General Relativity*
- 2011 Participant: 6 th Gulf Coast Gravity Meeting, May 2011, Florida Atlantic University, Boca Raton, FL.
- 2010 Participant: Experimental Search for Quantum Gravity Workshop, July 2010, NORDITA, Stockholm, Sweden
- 2009 Poster: APS April Meeting, Denver, CO. Title: *Modeling Inflation with CMB and 21 cm Anisotropy Measurements*

SEMINARS AND PUBLIC TALKS

- 2011-2015 Participant: Whizkey Seminar (2011-2015)
- 2011 Participant: Differential Geometry Seminar, led by Prof. Larry Shepley, Summer 2011
- 2011 Public Qualifier Talk: *Variations of Area in Geometrodynamics* Given November 17th, 2011

Works/Publication List

DISSERTATION

Feng, Justin C., *Temporal Insights from the End of Space*

ARTICLES

J. Feng, M. Baumann, B. Hall, J. Doss, and L. Spencer. A Simple Post-Minkowskian N-Body Code, 2017. (*In preparation*).

J. C. Feng. Nonconservative Sources for General Relativity, 2017. (*In preparation*).

J. C. Feng. Second Functional Derivatives and the Wheeler-DeWitt Equation, 2017. (*In preparation*).

J. C. Feng and R. A. Matzner. From Path Integrals to the Wheeler-DeWitt Equation: On Time Evolution in Spacetimes With Spatial Boundary. arXiv 1708.07001, August 2017. (*Submitted to PRD*).

J. C. Feng and R. A. Matzner. The Weiss Variation of the Gravitational Action. arXiv 1708.04489, August 2017. (*Submitted to GRG*).

NOTES

Feng, J. C., *Notes on General Relativity, the 3+1 Formalism, and the Variational Principle*, 377 pages (unpublished)

Feng, J. C., *The Poor Man's Introduction to Tensors*, 40 pages (posted on website—updated 09/2017)