Javier Roulet

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Employment

Kavli Institute for Theoretical Physics
University of California, Santa Barbara — Sep. 2021 – Aug. 2022
Postdoctoral Scholar

Education

Princeton University, USA — 2016 – 2021
Ph.D. in Physics
Thesis: *The Binary Black Holes of LIGO and Virgo*
Advisor: Prof. Matias Zaldarriaga

Universidad de Buenos Aires, Argentina — 2011 – 2016
Licenciatura in Physics
Thesis: *Average Activities in Populations of Excitable Phase Oscillators*
Advisor: Prof. Gabriel B. Mindlin

Teaching Experience

Assistant in Instruction
Princeton University, USA — Sep. 2017 – May 2021
Courses: Physics for Future Leaders, Advanced Electromagnetism, Introduction to General Relativity, Advanced Physics, Introduction to the Quantum Theory, General Physics, Biophysics

Teaching Assistant
Universidad de Buenos Aires, Argentina — Mar. 2015 – Aug. 2016
Courses: Fluid Dynamics, Wave Mechanics, Physics for Biologists

Fellowships

President's Fellowship, Princeton University — Sep. 2016 – Jun. 2017
Dean's Grant Research Allowance, Princeton University — 2016
CONICET Doctoral Fellowship — Apr. – Aug. 2016

Publications

[1] Seth Olsen, Javier Roulet, Horng Sheng Chia, Liang Dai, Tejaswi Venumadhav, Barak Zackay, Matias Zaldarriaga (2021). *Mapping the Likelihood of GW190521 with Diverse Mass and Spin Priors* arXiv:2106.13821 [astro-ph.HE]

[2] Javier Roulet, Horng Sheng Chia, Seth Olsen, Liang Dai, Tejaswi Venumadhav, Barak Zackay and Matias Zaldarriaga (2021). *On the Distribution of Effective Spins and Masses of Binary Black Holes from the LIGO and Virgo O1–O3a Observing Runs.* arXiv:2105.10580 [astro-ph.HE]

[3] Horng Sheng Chia, Seth Olsen, Javier Roulet, Liang Dai, Tejaswi Venumadhav, Barak Zackay and Matias Zaldarriaga (2021). *Boxing Day Surprise: Higher Multipoles and Orbital Precession in GW151226.* arXiv:2105.06486 [astro-ph.HE]

[4] Javier Roulet, Tejaswi Venumadhav, Barak Zackay, Liang Dai and Matias Zaldarriaga, (2020). *Binary Black Hole Mergers from LIGO/Virgo O1 and O2: Population Inference Combining Confident and Marginal Events.* Physical Review D. 102, 123022

[5] Liang Dai, Barak Zackay, Tejaswi Venumadhav, Javier Roulet and Matias Zaldarriaga (2020). *Search for Lensed Gravitational Waves Including Morse Phase Information: An Intriguing Candidate in O2.* arXiv:2007.12709 [astro-ph].

[6] Yiwen Huang, Carl-Johan Haster, Javier Roulet, Salvatore Vitale, Aaron Zimmerman, Tejaswi Venumadhav, Barak Zackay, Liang Dai and Matias Zaldarriaga (2020). *Source Properties of the Lowest Signal-to-Noise-Ratio Binary Black Hole Detections.* Physical Review D. 102, 103024

[7] Barak Zackay, Liang Dai, Tejaswi Venumadhav, Javier Roulet and Matias Zaldarriaga (2019). *Detecting Gravitational Waves With Disparate Detector Responses: Two New Binary Black Hole Mergers.* arXiv:1910.09528 [astro-ph.HE].

[8] Barak Zackay, Tejaswi Venumadhav, Javier Roulet, Liang Dai and Matias Zaldarriaga (2019). *Detecting Gravitational Waves in Data with Non-Gaussian Noise.* arXiv:1908.05644 [astro-ph.IM].

[9] Tejaswi Venumadhav, Barak Zackay, Javier Roulet, Liang Dai and Matias Zaldarriaga (2020). *New Binary Black Hole Mergers in the Second Observing Run of Advanced LIGO and Advanced Virgo.* Physical Review D. 101, 083030.

[10] Javier Roulet, Liang Dai, Tejaswi Venumadhav, Barak Zackay and Matias Zaldarriaga (2019). *Template Bank for Compact Binary Coalescence Searches in Gravitational Wave Data: A General Geometric Placement Algorithm.* Physical Review D. 99.123022.

[11] Barak Zackay, Tejaswi Venumadhav, Liang Dai, Javier Roulet and Matias Zaldarriaga (2019). *A Highly Spinning and Aligned Binary Black Hole Merger in the Advanced LIGO First Observing Run.* Physical Review D. 100, 023007.

[12] Tejaswi Venumadhav, Barak Zackay, Javier Roulet, Liang Dai and Matias Zaldarriaga (2019). *A New Search Pipeline for Compact Binary Mergers: Results for Binary Black Holes in the First Observing Run of Advanced LIGO.* Physical Review D. 100, 023011.

[13] Javier Roulet and Matias Zaldarriaga (2019). *Constraints on Binary Black Hole Populations from LIGO–Virgo Detections.* Monthly Notices of the Royal Astronomical Society. 484, 4216.

[14] Javier Roulet and Gabriel B. Mindlin (2017). *A Diagrammatic Representation of Phase Portraits and Bifurcation Diagrams of Two-Dimensional Dynamical Systems.* International Journal of Bifurcation and Chaos. 27. 1730045. 10.1142/S0218127417300452

[15] Javier Roulet and Gabriel B. Mindlin (2016). *Average Activity of Excitatory and Inhibitory Neural Populations.* Chaos: An Interdisciplinary Journal of Nonlinear Science. 26. 10.1063/1.4962326

Talks

Talk, American Physical Society April Meeting 2021	2021
Institute for Advanced Study / Princeton University Bahcall Lunch	2021
Invited Talk, Astrophysics Coffee, Weizmann Institute of Science	2020
Invited Talk, Brown Bag Lunch, MIT Kavli Institute	2020
Invited Seminar, Max Planck Institute for Gravitational Physics (Albert Einstein Institute)	2020
Talk, American Physical Society April Meeting 2020	2020
Invited Talk, High Energy Physics Journal Club, Princeton University	2020

	Talk, 22nd International Conference on General Relativity and Gravitation – 13th Edoardo Amaldi Conference on Gravitational Waves	2019
	Invited Seminar, Institut de Ciències del Cosmos, Universitat de Barcelona	2019
	Talk, JSI Workshop 2018: Gravitational Wave Physics and Astronomy Workshop	2018
	Poster, Princeton Research Day, Princeton University	2017

Referee for

Physical Review D

Astrophysical Journal Letters

Monthly Notices of the Royal Astronomical Society

Chaos, Solitons and Fractals: the Interdisciplinary Journal of Nonlinea Science, and Nonequilibrium and Complex Phenomena