

JAVIER ROULET

Email: jroulet@caltech.edu

Phone: +1 908 3440660

DOB: September 11, 1992

Citizenship: Argentina, Italy, Switzerland, United States

Cahill Center for Astronomy and Astrophysics, Office 332

1216 E California Blvd

Pasadena, CA 91125, USA

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| Employment | CALIFORNIA INSTITUTE OF TECHNOLOGY Sherman Fairchild Postdoctoral Scholar | 2022 – |
| | KAVLI INSTITUTE FOR THEORETICAL PHYSICS UNIVERSITY OF CALIFORNIA, SANTA BARBARA Postdoctoral Scholar | 2021 – 2022 |
| Education | PRINCETON UNIVERSITY Ph.D. in Physics Thesis: <i>The Binary Black Holes of LIGO and Virgo</i> Advisor: Prof. Matias Zaldarriaga | 2016 – 2021 |
| | UNIVERSIDAD DE BUENOS AIRES Licenciatura in Physics Thesis: <i>Average Activities in Populations of Excitable Phase Oscillators</i> Advisor: Prof. Gabriel B. Mindlin | 2011 – 2016 |
| Fellowships | Burke Fellowship, California Institute of Technology | 2022 – 2025 |
| | President’s Fellowship, Princeton University | 2016 – 2017 |
| | Dean’s Grant Research Allowance, Princeton University | 2016 |
| | CONICET Doctoral Fellowship | 2016 |
| Publications | [1] Tousif Islam, Javier Roulet, Tejaswi Venumadhav (2022). <i>Factorized parameter estimation for real-time gravitational wave inference</i> . arXiv:2210.16278 [gr-qc] | |
| | [2] Javier Roulet, Seth Olsen, Jonathan Mushkin, Tousif Islam, Tejaswi Venumadhav, Barak Zackay, Matias Zaldarriaga (2022). <i>Removing degeneracy and multimodality in gravitational wave source parameters</i> . Physical Review D 106, 123015. | |
| | [3] Seth Olsen, Tejaswi Venumadhav, Jonathan Mushkin, Javier Roulet, Barak Zackay and Matias Zaldarriaga (2022). <i>New binary black hole mergers in the LIGO–Virgo O3a data</i> . Physical Review D 106, 043009. | |
| | [4] Seth Olsen, Javier Roulet, Horng Sheng Chia, Liang Dai, Tejaswi Venumadhav, Barak Zackay and Matias Zaldarriaga (2021). <i>Mapping the Likelihood of GW190521 with Diverse Mass and Spin Priors</i> . Physical Review D 104, 083036. | |
| | [5] Javier Roulet, Horng Sheng Chia, Seth Olsen, Liang Dai, Tejaswi Venumadhav, Barak Zackay and Matias Zaldarriaga (2021). <i>Distribution of Effective Spins and Masses of Binary Black Holes from the LIGO and Virgo O1–O3a Observing Runs</i> . Physical Review D 104, 083010. | |
| | [6] Horng Sheng Chia, Seth Olsen, Javier Roulet, Liang Dai, Tejaswi Venumadhav, Barak Zackay and Matias Zaldarriaga (2022). <i>Signs of higher multipoles and orbital precession in GW151226</i> . Physical Review D 106, 024009 | |
| | [7] Javier Roulet, Tejaswi Venumadhav, Barak Zackay, Liang Dai and Matias Zaldarriaga, (2020). <i>Binary Black Hole Mergers from LIGO/Virgo O1 and O2: Population Inference Combining Confident and Marginal Events</i> . Physical Review D 102, 123022. | |

- [8] 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.HE].
- [9] 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.
- [10] 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*. Physical Review D 104, 063030.
- [11] Barak Zackay, Tejaswi Venumadhav, Javier Roulet, Liang Dai and Matias Zaldarriaga (2019). *Detecting Gravitational Waves in Data with Non-Gaussian Noise*. Physical Review D 104, 063034.
- [12] 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.
- [13] 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.
- [14] 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.
- [15] 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.
- [16] 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.
- [17] 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
- [18] 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

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| Talk, ARC Centre of Excellence for Gravitational Wave Discovery (OzGrav), Swinburne University of Technology | 2022 |
| Invited panel discussion, Gravitational Wave Physics and Astronomy Workshop 2022 | 2022 |
| Invited seminar, Perimeter Institute for Theoretical Physics | 2022 |
| Invited seminar, International Center for Theoretical Sciences, Tata Institute of Fundamental Research | 2022 |
| Talk, American Physical Society April Meeting 2022 | 2022 |

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| | Invited seminar, Department of Applied Math and Theoretical Physics, University of Cambridge | 2022 |
| | Invited seminar, Caltech–LIGO seminar, California Institute of Technology | 2022 |
| | Local’s Friday blackboard talk, Kavli Institute for Theoretical Physics | 2021 |
| | Talk, Gravitational Wave Physics and Astronomy Workshop 2021 | 2021 |
| | Poster, Workshop III: Source Inference and Parameter Estimation in Gravitational Wave Astronomy, Institute for Pure and Applied Mathematics, University of California, Los Angeles | 2021 |
| | 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 |
| Mentoring | Tousif Islam (graduate student) | 2021 – 2022 |
| | Cuishan Liu (undergraduate student) | 2021 – 2022 |

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| Teaching | ASSISTANT IN INSTRUCTION PRINCETON UNIVERSITY, USA Courses: Physics for Future Leaders, Advanced Electromagnetism, Introduction to General Relativity, Advanced Physics, Introduction to the Quantum Theory, General Physics, Biophysics | 2017 – 2021 |
| | TEACHING ASSISTANT UNIVERSIDAD DE BUENOS AIRES, ARGENTINA Courses: Fluid Dynamics, Wave Mechanics, Physics for Biologists | 2015 – 2016 |
| Referee for | Astronomy & Astrophysics | |
| | Astrophysical Journal | |
| | Astrophysical Journal Letters | |
| | Chaos, Solitons and Fractals: the Interdisciplinary Journal of Nonlinear Science, and Nonequilibrium and Complex Phenomena | |
| | Monthly Notices of the Royal Astronomical Society | |
| | Physical Review D | |
| | Physical Review X | |