

# Carl Rodriguez | Publication List

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A complete list of publications can also be found at the NASA ADS service [here](#).

## First Author Papers (with links)

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- Black Holes: The Next Generation – Repeated Mergers in Dense Star Clusters and their Gravitational-Wave Properties** PRD  
2019  
*C. L. Rodriguez, M. Zevin, P. Amaro-Seoane, S. Chatterjee, K. Kremer, F. Rasio, S. Ye*; Phys. Rev. D, **100**, 043027
- Post-Newtonian Dynamics in Dense Star Clusters: Formation, Masses, and Merger Rates of Highly-Eccentric Black Hole Mergers** PRD  
2018  
*C. L. Rodriguez, P. Amaro-Seoane, S. Chatterjee, K. Kremer, F. Rasio, J. Samsing, S. Ye, M. Zevin*; Phys. Rev. D, **98**, 123005
- Redshift Evolution of the Black Hole Merger Rate From Globular Clusters** ApJL  
2018  
*C. L. Rodriguez, A. Loeb*; ApJL, **865**, L5
- A Triple Origin for the Heavy and Low-Spin Binary Black Holes Detected by LIGO/Virgo** ApJ  
2018  
*C. L. Rodriguez, F. Antonini*; ApJ, **863**, 1, 7
- A New Hybrid Technique for Modeling Dense Star Clusters** CompAC  
2018  
*C. L. Rodriguez, B. Pattabiraman, S. Chatterjee, M. Morscher, F. Rasio, A. Choudhary, W-K. Liao*; Computational Astrophysics and Cosmology, **5**, 1
- Post-Newtonian Dynamics in Dense Star Clusters: Highly-Eccentric, Highly-Spinning, and Repeated Binary Black Hole Mergers** PRL  
2018  
*C. L. Rodriguez, P. Amaro-Seoane, S. Chatterjee, F. Rasio*; Phys. Rev. Lett, **120**, 151101  
- Articles in *Boston Globe*, *MIT News* (Links),
- Illuminating Black Hole Binary Formation Channels with Spins in Advanced LIGO** ApJL  
2016  
*C. L. Rodriguez, M. Zevin, C. Pankow, V. Kalogera, F. Rasio*; ApJL, **832**, L2
- Dynamical Formation of the GW150914 Binary Black Hole** ApJL  
2016  
*C. L. Rodriguez, C.-J. Haster, S. Chatterjee, V. Kalogera, F. Rasio*; ApJL, **824**, L8  
- Articles in *New Scientist*, *Sky News* (Links),  
- Synopsis in *Astrobites* (Link)
- Binary Black Hole Mergers from Globular Clusters: Masses, Merger Rates, and the Impact of Stellar Evolution** PRD  
2016  
*C. L. Rodriguez, S. Chatterjee, F. Rasio*; Phys. Rev. D, **93**, 084029
- Million-Body Star Cluster Simulations: Comparisons between Monte Carlo and Direct N-body** MNRAS  
2016  
*C. L. Rodriguez, M. Morscher, L. Wang, S. Chatterjee, F. Rasio, R. Spurzem*; MNRAS **463**, 2109
- Binary Black Hole Mergers from Globular Clusters: Implications for Advanced LIGO** PRL  
2015  
*C. L. Rodriguez, M. Morscher, B. Pattabiraman, S. Chatterjee, C.J. Haster, and F. Rasio*; Phys. Rev. Lett. **115**, 051101  
- Synopsis by APS in *Physics* (Link)

- Synopsis in popular science blog *IFLS* (Link)

- Basic Parameter Estimation of Binary Neutron Star Systems by the Advanced LIGO/Virgo Network** ApJ  
2014  
*C. L. Rodriguez, B. Farr, V. Raymond, W. Farr, T. Littenberg, D. Fazi, V. Kalogera*; ApJ, **785**, 2, 119
- Inadequacies of the Fisher Information Matrix in gravitational-wave parameter estimation** PRD  
2013  
*C. L. Rodriguez, B. Farr, W. Farr, I. Mandel*; Phys. Rev. D, **88**, 8, 084013
- Verifying the no-hair property of massive compact objects with intermediate-mass-ratio inspirals in advanced gravitational-wave detectors** PRD  
2012  
*C. L. Rodriguez, I. Mandel, J. Gair*; Phys. Rev. D, **85**, 6, 062002  
- Synopsis in *Astrobit*es (Link)

## Second Author Papers (with links)

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- Post-Newtonian Dynamics in Dense Star Clusters: Binary Black Holes in the LISA Band** 2018  
*K. Kremer, C. L. Rodriguez, P. Amaro-Seoane, K. Breivik, S. Chatterjee, M. Katz, S. Larson, F. Rasio, J. Samsing, S. Ye, M. Zevin*; Phys. Rev. D (submitted)
- Precessional Dynamics of Black Hole Triples: Binary Mergers with near-zero Effective Spin** MNRASL  
2018  
*F. Antonini, C. L. Rodriguez, C. Petrovich, C. Fischer*; MNRAS Letters, **480**, 1, L58
- Binary Black Holes in Dense Star Clusters: Exploring the Theoretical Uncertainties** ApJ  
2017  
*S. Chatterjee, C. L. Rodriguez, F. Rasio*; ApJ, **834**, 1, 68
- Dynamical Formation of Low-mass Merging Black Hole Binaries like GW151226** ApJL  
2017  
*S. Chatterjee, C. L. Rodriguez, V. Kalogera, F. Rasio*; ApJL, **836**, L26
- Distinguishing Between Formation Channels for Binary Black Holes with LISA** ApJL  
2016  
*K. Breivik, C. L. Rodriguez, S. Larson, V. Kalogera, F. Rasio*; ApJL, **830**, L18

## Contributing Author (with links)

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- Eccentric Black Hole Mergers in Dense Star Clusters: The Role of Binary-Binary Encounters** ApJ  
2018  
*M. Zevin, J. Samsing, C. L. Rodriguez, C. Haster, E. Ramirez-Ruiz*;  
ApJ (in press)
- Predicting Stellar-mass Black Hole Populations in Globular Clusters** ApJ  
2018  
*N. Weatherford, S. Chatterjee, C. L. Rodriguez, F. Rasio*;  
ApJ, **864**, 13
- How initial size governs core collapse in globular clusters** ApJ  
2018  
*K. Kremer, S. Chatterjee, C. Ye, C. L. Rodriguez, F. Rasio*;  
ApJ (in press)
- LISA Sources in Milky Way Globular Clusters** PRL  
2018  
*K. Kremer, S. Chatterjee, K. Breivik, C. L. Rodriguez, S. Larson, F. Rasio*;  
PRL, **120**, 19
- How Black Holes Shape Globular Clusters: Modeling NGC 3201** ApJL  
2018  
*K. Kremer, C. Ye, S. Chatterjee, C. L. Rodriguez, F. Rasio*;  
ApJL, **855**, 15

- Low-mass X-ray binaries ejected from globular clusters**  
K. Kremer, S. Chatterjee, *C. L. Rodriguez*, F. Rasio; ApJ (submitted) 2018
- Accreting Black Hole Binaries in Globular Clusters**  
K. Kremer, S. Chatterjee, *C. L. Rodriguez*, F. Rasio; ApJ, **852**, 29 **ApJ** 2017
- Constraining Models of Binary Black Hole Formation with Gravitational-Wave Observations**  
M. Zevin, C. Pankow, *C. L. Rodriguez*, L. Sampson, E. Chase, V. Kalogera, F. Rasio; ApJ, **846**, 82Z **ApJ** 2017
- Black Hole Mergers and Blue Stragglers from Hierarchical Triples Formed in Globular Clusters**  
F. Antonini, S. Chatterjee, *C. L. Rodriguez*, M. Morscher, B. Pattabiraman, V. Kalogera, F. Rasio; ApJ, **816**, 2, 65 **ApJ** 2016
- The Dynamical Evolution of Stellar Black Holes in Globular Clusters**  
M. Morscher, B. Pattabiraman, *C. L. Rodriguez*, F. Rasio, S. Umbreit; ApJ, **800**, 1, 21 **ApJ** 2015
- Parameter Estimation for Compact Binaries with Ground-based Gravitational-wave Observations Using the LALInference Software Library**  
J. Veitch, V. Raymond, B. Farr, W. Farr, P. Graff, S. Vitale, B. Aylott, K. Blackburn, N. Christensen, M. Coughlin, W. Del Pozzo, F. Feroz, J. Gair, C.J. Haster, V. Kalogera, T. Littenberg, I. Mandel, R. O'Shaughnessy, M. Pitkin, *C. L. Rodriguez*, C. Röver, T. Sidery, R. Smith, M. Van Der Sluys, A. Vecchio, W. Vousden, L. Wade; Phys. Rev. D, **91**, 4, 042003 **PRD** 2015
- Comparison of Gravitational Wave Detector Network Sky Localization Approximations**  
K. Grover, S. Fairhurst, B. Farr, I. Mandel, *C. L. Rodriguez*, T. Sidery, A. Vecchio; Phys. Rev. D, **89**, 4, 042004 **PRD** 2014
- Estimating parameters of coalescing compact binaries with proposed advanced detector networks**  
J. Veitch, I. Mandel, B. Aylott, B. Farr, V. Raymond, *C. L. Rodriguez*, M. van der Sluys, V. Kalogera, A. Vecchio; Phys. Rev. D **85**, 104045 **PRD** 2012
- Mock data challenge for the Einstein Gravitational-Wave Telescope**  
T. Regimbau, T. Dent, W. Del Pozzo, S. Giampanis, T.G.F. Li, C. Robinson, C. Van Den Broeck, D. Meacher, *C. L. Rodriguez*, B.S. Sathyaprakash, K. Wójcik; Phys. Rev. D **86**, 122001 **PRD** 2012
- Lateral alignment of InGaAs quantum dots as function of spacer thickness**  
Z. Wang, *C. L. Rodriguez*, S. Seydmohamadi, Y. I. Mazur, G. Salamo; Appl. Phys. Lett. **94**, 083107 **APL** 2009
- Controlling fluorescence intermittency of a single colloidal CdSe/ZnS quantum dot in a half cavity**  
Y. Zhang, V. Komarala, *C. L. Rodriguez*, M. Xiao; Phys. Rev. B **78**, 241301(R) **PRB** 2008

## Collaboration Papers

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### Coauthor on 23 Collaboration Papers as a Member of the LIGO Scientific Collaboration

[Click Here for Full List of Citations](#)

2011-2015

- Characterization of the LIGO detectors during their sixth science run
- Searching for stochastic gravitational waves using data from the two colocated LIGO Hanford detectors
- Constraints on Cosmic Strings from the LIGO-Virgo Gravitational-Wave Detectors
- Application of a Hough search for continuous gravitational waves on data from the fifth LIGO science run
- Gravitational Waves from Known Pulsars: Results from the Initial Detector Era

- First Searches for Optical Counterparts to Gravitational-wave Candidate Events
- Search for long-lived gravitational-wave transients coincident with long gamma-ray bursts
- Directed search for continuous gravitational waves from the Galactic center
- Parameter estimation for compact binary coalescence signals with the first generation gravitational-wave detector network
- A first search for coincident gravitational waves and high energy neutrinos using LIGO, Virgo and ANTARES data from 2007
- Einstein@Home all-sky search for periodic gravitational waves in LIGO S5 data
- Search for gravitational waves from binary black hole inspiral, merger, and ringdown in LIGO-Virgo data from 2009-2010
- Swift Follow-up Observations of Candidate Gravitational-wave Transient Events
- Search for Gravitational Waves Associated with Gamma-Ray Bursts during LIGO Science Run 6 and Virgo Science Runs 2 and 3
- The characterization of Virgo data and its impact on gravitational-wave searches
- All-sky search for gravitational-wave bursts in the second joint LIGO-Virgo run
- Upper limits on a stochastic gravitational-wave background using LIGO and Virgo interferometers at 600-1000 Hz
- Search for gravitational waves from intermediate mass binary black holes
- First low-latency LIGO+Virgo search for binary inspirals and their electromagnetic counterparts
- Search for gravitational waves from low mass compact binary coalescence in LIGO's sixth science run and Virgo's science runs 2 and 3
- Implementation and testing of the first prompt search for gravitational wave transients with electromagnetic counterparts
- All-sky search for periodic gravitational waves in the full S5 LIGO data
- A gravitational wave observatory operating beyond the quantum shot-noise limit