

César A. Parra Rojas

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EDUCATION

Machine Learning Engineer Nanodegree Udacity Nanodegree Program view certificate	2018
Ph.D. Physics School of Physics and Astronomy, University of Manchester Supervisor: Prof. Alan J. McKane Thesis: <i>Intrinsic fluctuations in discrete and continuous time models</i> Supervisor: Prof. Alan J. McKane	2016
M.Sc. Physics FCFM, Universidad de Chile Thesis: <i>Efectos macroscópicos de las fluctuaciones en un baño bacteriano diluido (Macroscopic effects of fluctuations in a dilute bacterial bath)</i> Supervisor: Prof. Rodrigo Soto.	2013
B.Sc. Astronomy FCFM, Universidad de Chile	2012
B.Sc. Physics FCFM, Universidad de Chile	2010

AWARDS AND HONORS

Becas Chile PhD scholarship from CONICYT	2013–'16
Fulbright nominee	2012
Masters scholarship from CONICYT	2011–'12
1 st position in ranking of the School of Science and Engineering and 1 st position in ranking of Physics students at the end of B.Sc. program	2010
Outstanding Student Award by Universidad de Chile	2006–'09, '11

PUBLICATIONS

Submitted

1. **C. Parra-Rojas**, V. K. Nguyen, G. Hernández-Mejía, and E. A. Hernandez-Vargas, “Neuraminidase inhibitors—is it time to call it a day?”. [[bioRxiv](#)]
2. **C. Parra-Rojas**, V. von Messling, and E. A. Hernandez-Vargas, “Adjuvanted influenza vaccine dynamics”.

Journal articles

1. V. K. Nguyen, **C. Parra-Rojas**, and E. A. Hernandez-Vargas, “The 2017 plague outbreak in Madagascar: data descriptions and epidemic modelling”, *Epidemics* (in press). [[bioRxiv](#)]
2. **C. Parra-Rojas**, and A. J. McKane, “Reduction of a metapopulation genetic model to an effective one island model”, *Europhys. Lett.* **122**, 18001 (2018). [[journal](#), [arXiv](#)]
3. **C. Parra-Rojas**, T. House, and A. J. McKane, “Stochastic epidemic dynamics on extremely heterogeneous networks”, *Phys. Rev. E* **94(6)**, 062408 (2016). [[journal](#), [arXiv](#)]
4. **C. Parra-Rojas**, J. D. Challenger, D. Fanelli, and A. J. McKane, “Suppressing escape events in maps of the unit interval with demographic noise”, *Phys. Rev. E* **94(5)**, 052133 (2016). [[journal](#), [arXiv](#)]
5. **C. Parra-Rojas**, J. D. Challenger, D. Fanelli, and A. J. McKane, “Intrinsic noise and two-dimensional maps: Quasicycles, quasiperiodicity, and chaos”, *Phys. Rev. E* **90(3)**, 032135 (2014). [[journal](#), [arXiv](#)]
6. **C. Parra-Rojas**, and R. Soto, “Casimir effect in swimmer suspensions”, *Phys. Rev. E* **90(1)**, 013024 (2014). [[journal](#), [arXiv](#)]
7. **C. Parra-Rojas**, and R. Soto, “Active temperature and velocity correlations produced by a swimmer suspension”, *Phys. Rev. E* **87(5)**, 053022 (2013). [[journal](#), [arXiv](#)]
8. J. A. Kurzman, J. Li, T. D. Schladt, **C. R. Parra**, X. Ouyang, R. Davis, J. T. Miller, S. L. Scott, and R. Seshadri, “Pd²⁺/Pd⁰ redox cycling in hexagonal YMn_{0.5}Fe_{0.5}O₃: Implications for catalysis by PGM substituted complex oxides”, *Inorg. Chem.* **50**, 8073–8084 (2011). [[journal](#)]

Conference proceedings

1. M. A. Colman, **C. Parra-Rojas**, and E. A. Pérez Alday, “From Microscopic Calcium Sparks to the ECG: Model Reduction Approaches for Multi-Scale Cardiac Simulation”, *Computing in Cardiology (CinC)*, 325–328 (2015). [[journal](#)]

PRESENTATIONS

Talks

- 28th Annual Meeting of the Society for Virology March 2018
Julius-Maximilians-Universität Würzburg, Würzburg, Germany
Title: *Role of adjuvants in immune response dynamics after influenza vaccination*
- XIV Latin American Workshop on Nonlinear Phenomena September 2015
Cartagena, Colombia
Title: *Mesoscopic description of discrete-time stochastic processes*
- XVIII Simposio Chileno de Física November 2012
La Serena, Chile
Title: *Temperatura activa de una suspensión bacteriana (Active temperature of a bacterial suspension)*

Posters

- 28th Annual Meeting of the Society for Virology* March 2018
Julius-Maximilians-Universität Würzburg, Würzburg, Germany
Title: *Neuraminidase inhibitors—is it time to call it a day?*
- Southern Workshop on Granular Materials* December 2012
Puerto Varas, Chile
Title: *Velocity agitation energy due to an active suspension*
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OTHER RESEARCH

- Argonne National Laboratory & JFI, University of Chicago January–March 2012
Chicago-Chile Materials Collaboration Program.
Research: Study of noise effects on the nematic transition of bacterial suspensions.
Supervisor: Prof. Igor Aronson.
- FCFM, Universidad de Chile January 2011
Cerro Calán Observatory.
Research: *Robotic telescope: optimisation of observation plan by means of Ant Colony Optimisation and genetic algorithms.*
Supervisor: Dr. Francisco Förster.
- Materials Research Laboratory, University of California, Santa Barbara January–March 2010
CISEI program.
Research: $\text{Pd}^{2+}/\text{Pd}^0$ redox cycling in hexagonal $\text{YMn}_{0.5}\text{Fe}_{0.5}\text{O}_3$.
PI: Prof. Ram Seshadri
Supervisor: Dr. Joshua Kurzman.
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SKILLS

Proficient: Python (numpy, pandas, scikit-learn, scipy, keras), Wolfram Mathematica, LaTeX.
Familiar with: Git, Bash, FORTRAN, MATLAB, C⁺⁺.

OTHER ACTIVITIES

- The University of Manchester Chilean Society: chair 2015–2016; diversity officer 2014–2015.
 - Member of the University of Manchester Chorus from 2013 to 2014 and of the School of Science and Engineering Choir of Universidad de Chile from 2007 to 2009.
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