

Jorge Talamantes Rivera

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Education B.A. in physics, University of California, San Diego (June, 1984); Ph. D. in physics, University of California, Riverside (June, 1989).

Present Position Professor of Physics & Engineering.

Teaching: Undergraduate courses at all levels;

Research: 1) Computational/theoretical condensed matter physics – electronic transport in disordered systems; 2) Atmospheric physics – radiative transfer and cloud physics; 3) Earth system science – studies of coccidioidomycosis (valley fever).

Courses Taught Lower Division: 1) *Introduction to Computer Simulation with Applications to Biology*; 2) *Engineering Orientation*; 3) *Electric Circuits*; 4) *Principles of Physical Science*; 5) *Introduction to Astronomy*; 6) *Basic Principles of Newtonian Physics*; 7) *Basic Principles of Maxwellian Physics*; 8) *Basic Principles of Contemporary Physics*; 9) *Classical Physics I*; 10) *Classical Physics II*; 11) *Optics and Modern Physics*. Upper Division: 12) *Introduction to Weather Dynamics*; 13) *Circuit Theory and Electronics*; 14) *Condensed-Matter Physics I*; 15) *Condensed-Matter Physics II*; 16) *Electricity and Magnetism I*; 17) *Electricity and Magnetism II*; 18) *Thermal Physics*; 19) *Statistical Mechanics*; 20) *Quantum Mechanics I*; 21) *Quantum Mechanics II*; 22) *Special Topics in Physics*; 23) *Research Participation*; 24) *Senior Seminar*.

Selected publications (all peer-reviewed)

Combining Forces - The Use of Landsat TM Satellite Imagery, Soil Parameter Information, and Multiplex PCR to Detect Coccidioides immitis Growth Sites in Kern County, California A. Lauer, **J. Talamantes**, L. R. Castañón Olivares, L. J. Medina, J. D. H. Baal, K. Casimiro, N. Shroff, and K. Emery, PLoS ONE 9(11): e111921 (2014), doi:10.1371/journal.pone.0111921

Fluctuations in Climate and Incidence of Coccidioidomycosis in Kern County, California: a review, **J. Talamantes**, S. Behseta and C. S. Zender, Ann. N.Y. Acad. Sci. **1111**, 73-82 (2007), doi: 10.1196/annals.1406.028.

Statistical Modeling of Valley Fever Data in Kern County, California, **J. Talamantes**, S. Behseta and C. S. Zender, Int. J. Biometeorol., **51**, 307-315 (2007), doi: 10.1007/s00484-006-0065-4.

Climate controls on Valley Fever incidence in Kern County, California, C. S. Zender and **J. Talamantes**, Int. J. Biometeorol. **50**, 174-182 (2006).

Solar absorption by Mie resonance in cloud droplets, C. S. Zender and **J. Talamantes**, J. Quant. Spectrosc. Radiat. Transfer **98**, 112-129 (2006).

Specific Heat of the Coulomb Glass, A. Möbius, P. Thomas, **J. Talamantes** and C. J. Adkins, Phil. Mag. B **81**, 1105 (2001).

- Coulomb Interactions in Anderson Insulators*, M. Ortuño, **J. Talamantes**, E. Cuevas and A. Diaz-Sanchez, *Phil. Mag. B* **81**, 1049 (2001).
- Two electrons in a two-dimensional random potential: Exchange, interaction and localization*, **Jorge Talamantes** and Michael Pollak, *Phys. Rev. B* **62**, 12785 (2000).
- The Delocalization Problem of Two Interacting Electrons in a Two-Dimensional Random Potential*, **J. Talamantes**, M. Pollak and I. Varga, *phys. stat. sol. (b)* **218**, 119 (2000).
- Phononless Hopping in the Coulomb Glass*, **J. Talamantes** and A. Möbius. *phys. stat. sol. (b)* **205**, 45 (1998).
- Level Spacing Distributions and Elastic Hopping in the Coulomb Glass*, **J. Talamantes**, M. Pollak and L. Elam. *Europhys. Lett.* **35**, 511 (1996).
- On the States of Localized Interacting Systems*, **J. Talamantes** and D. Espericueta. *Modeling Simul. Mater. Sci. Eng.* **1**, 761 (1993).

Selected oral presentations :

- Mapping potential Coccidioides growth sites based on satellite imagery and molecular biology*, 55th Annual Coccidioidomycosis Study Group Meeting, April 2, 2011. University of California, Davis.
- An update on connections between Coccidioidomycosis incidence and climatic fluctuations*, 51st Annual Coccidioidomycosis Study Group Meeting, March 31, 2007. Biodesign Institute, Arizona State University, Mesa Arizona.
- Statistical modeling of valley fever data in Kern County, California*, Sixth International Symposium on Coccidioidomycosis, Stanford University, California, Aug 23-26, 2006.
- Online Weather Studies at California State University, Bakersfield*, Twelfth Symposium on Education, Eighty-third Meeting of the American Meteorological Society, Long Beach, California, 9-13 Feb, 2003.
- On the localization-delocalization transition of two electrons in a two-dimensional random potential*, Ninth International Conference on Hopping and Related Phenomena, Shefayim, Israel, 3-6 Sept 2001.

Synergistic Activities :

- Project Director for *Increasing the Productivity of the Engineering Degree Pipeline in the High Needs Southern San Joaquin Valley: A Sound Cooperative Arrangement Project with Bakersfield College*, a \$3.3M project funded by the US Department of Education (2015-2020).
- Project Director for *Developing New Engineering Degree Options for Underserved Hispanic Students in the Southern San Joaquin Valley*, a \$4.3M project funded by the US Department of Education (2011-2016).
- Six refereed articles with undergraduate student co-authors.

Honors Recipient of the Faculty Research Award, CSUB (2000).

Referee articles or research proposals for International Journal of Biometeorology; National Science Foundation; Agencia Nacional de Promoción Científica y Tecnológica de Argentina; *physica status solidi*; *Europhysics Letters*.