Curriculum Vitae

Thomas D. Gutierrez

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Education

- Ph.D. program, University of California, Davis, physics, 1994-present.
- M.S. San Jose State University, physics, 1994.
- B.S. San Jose State University, major: physics; minors: mathematics and music, 1991.

Research

- Theoretical high energy physics, 1998-present. Lattice QCD. Advisor: Dr. Joe Kiskis, University of California.
- High energy nuclear phenomenology, 1995-1998. Research focused on charm hadron production in hyperon-nucleus collisions. Advisor: Dr. Ramona Vogt, Nuclear Theory Group, Nuclear Science Division, Lawrence Berkeley National Laboratory and University of California, Davis.
- Experimental infrared tunable diode laser spectroscopy and computational physics, 1989-1994. Research included experimental laser spectroscopy methods, systems modeling, and numerical analysis of differential equations. Advisor: Dr. Joseph F. Becker, San Jose State University, NASA Ames Research Center.

Grants

- Graduate Workstudy Program, Summer and Fall 1997, University of California, Davis.
- Graduate Student Researchers Grant, 1991-1994, NASA Ames Research Center.
- Research Experience for Undergraduates (REU) Grant, 1989-1991, National Science Foundation, San Jose State University Foundation.

Awards

- Ryan Couch Memorial Fund, Spring 1998, Department of Physics, University of California, Davis.
- Nominated for Outstanding Graduate Student Teaching Award, 1997, University of California, Davis.

- Nominated for Outstanding Graduate Student Teaching Award, 1995, University of California, Davis.
- Nominated for Outstanding Thesis, 1995, San Jose State University.
- Computational Physics Award,"A Model of Diffusion in a Potential Using an FTCS Numerical Approximation" May 1994, Department of Physics, San Jose State University.
- Outstanding Student Award, 1993, Department of Physics, San Jose State University.
- San Jose State University Finalist, 1993, California State Univeristy Student Research Competition.
- Frederick N. Fitting Award, 1993, School of Science, San Jose State University.
- Outstanding Student Award, 1992, Department of Physics, San Jose State University.
- Multicultural Awareness Award, 1992, School of Science, San Jose State University.

Publications

- "Leading Charm in Hadron-Nucleus Interactions in the Intrinsic Charm Model," T. Gutierrez and R. Vogt, Lawrence Berkeley National Laboratory and University of California, Davis, hep-ph/9808213, accepted by Nuclear Physics B.
- "The Measurement and Modeling of Carbon Isotope Fractionation During Thermal Degassing of Magnesium Oxide," August 1994, Master's Thesis, San Jose State University.
- "Mars Airbag Analysis," Todd B. Sauke, Glenn Carle, John Marshall, Rocco Mancinelli, Debora Schwartz-Kolyer, Jose Valentin, Thomas D. Gutierrez, NASA Ames Research Center, June 1994, Mars Science Working Group inquiry.
- "An Overview of Isotopic Analysis Using Tunable Diode Laser Spectrometry," T. B. Sauke, J. F. Becker, M. Loewenstein, T. D. Gutierrez, C. G. Bratton (1994) Spectroscopy, 9, 34-40.
- "Improved Stable Isotope Laser Spectrometer and its Application to Soil Analysis," J. F. Becker, T. B. Sauke, T. D. Gutierrez, C. G. Bratton, in *Novel Laser Sources and Applications*, (J. Becker, J. Gruber, and L. Lam, eds. SPIE Publ., Bellingham, 1994).

Presentations and Abstracts

- "Leading Charm Hadrons in Σ^--A Interactions," April 18-21,1998, Joint Meeting of the APS and the AAPT Columbus, Ohio.
- "Charmed Baryon Production in Proton-Hyperon Collisions," November 1996, Student Only Seminar, University of California, Davis.
- "Stable Isotope Ratio Measurements of Carbon Using High Precision Tunable Diode Laser Spectroscopy," 1993, University of California, Riverside, California State University Student Research Competition (statewide).
- "Stable Isotope Ratio Measurements of Carbon Using High Precision Tunable Diode Laser Spectroscopy," 1993, San Jose State University, California State University Student Research Competition (local).
- "High Precision Tunable Diode Laser Spectroscopy as Applied to the Measurement of the Relative Abundance of ^{12}C and ^{13}C," July 1993, San Jose State University Physics Department Seminar.
- "Diode laser Spectroscopy and Isotope Ratio Measurements," Spring 1993, poster presented at the Annual Convention of the Optical Society of Northern California.
- "Stable Carbon Isotopic Ratio Measurements Using Tunable Diode Laser Spectroscopy," Summer 1992, San Jose State University Physics Department Seminar.
- "Carbon Isotope Fractionation Measurements During Isothermal Degassing of Magnesium Oxide Using Tunable Diode Laser Spectroscopy," March 1992, poster presented at the Optical Society of Northern California Opitics Convention.

Teaching Experience

- Teaching Assistant, University of California, Davis, 1994-present, courses:
  - Physics for Scientists and Engineers,
    - Physics 9A, duties: discussion group leader; topics: mechanics.
    - Physics 9HA, duties: discussion and lab teaching assistant; topics: mechanics.
    - Physics 9B, duties: discussion group leader; topics: optics and thermodynamics.
    - Physics 9HB, duties: discussion group leader and head reader; topics: honors 9B includes fluids and statistical mechanics.
    - Physics 9C, duties: discussion group leader; topics: electromagnetism and basic circuits.
    - Physics 9D, duties: discussion group leader; topics: introduction to relativity and quantum mechanics.

- General Physics,
  - Physics 5C, duties: laboratory instructor; topics: electromagnetism and basic circuits.

Other Activities

- Solutions checker, Instructor's Solutions Manual for Wolfson mechanics chapters, Addison Wesley Longman, 1998.
- Intradepartmental student representative, 1997-1998, University of California, Davis.
- Library committee member, 1997-1998, University of California, Davis.
- Physics club officer, 1992-1993, San Jose State University.
- Active in high school and elementary school science outreach programs, 1992-1993, San Jose State University.
- Summer work at Diasonics Inc., 1989-1990.