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Education

- Ph.D. Physics, University of California, Santa Barbara, USA, 2013.
- B.S. Physics, University of California, Santa Barbara, USA, 2006.
- A.S. Natural Sciences, Citrus College, Glendora, CA, USA, 2004.

Research Experience

Experimental High Energy Physics in Compact Muon Solenoid (CMS) Collaboration (2007-2013).

- Advisor: David Stuart, Department of Physics, University of California, Santa Barbara.
- Development and Prototyping of Fiber Tracker Upgrade for CMS Detector.(2013)
- Member of CMS SUSY Physics Analysis Group in Single Lepton SUSY Searches.(2009-2013)
- Analysis of Electron Identification Variable Using Photon Conversion in First Collision at CMS.(2009)
- CMS Tracker Data Acquisition (DAQ) Team Expert and Shift Leader.(2009-2012)
- CMS Tracker Installation and Commissioning of the CMS Tracker Safety System.(2007)

Seismology and Geodesy Study of Earthquakes and Seismic Hazard (Summer 2006).

- Advisor: Chen Ji, Department of Geology, University of California, Santa Barbara.
- Study of Earthquakes Using Finite Fault Inversion.
- Setup and Testing of Data Processing System for UCSB Geology Department.

Experimental Condense Matter Physics (2005-2006).

- Advisor: Dirk Boumeester, Department of Physics, University of California, Santa Barbara.
- Development of Niobium Superconducting Hot-Electron Bolometer (HEB) Single Photon Counter.
- Directed Reading for Quantum Information Systems and Computation.

Quantum Optic Experiments (2005).

- Advisor: Deborah Jackson, Physics Section, Jet Propulsion Laboratory, NASA, Pasadena.
- Study of Entangled Photon using High Power Laser to Produce Parametric Down Conversions in Non-Linear Crystals.
- Setup and Testing of Quantum Optics Testbed at JPL.

Fields of Research Interest

Experimental Particle Physics, Experimental High Energy Physics, Direct detection of Dark Matter, Neutrino Physics.

Publications

Peer-Reviewed Journal Articles

Search for supersymmetry in pp collisions at $\sqrt{s} = 7$ TeV in events with a single lepton, jets, and missing transverse momentum for $L = 5fb^{-1}$ (2012). arXiv:1212.6428. *European Physical Journal C*.

Search for supersymmetry in pp collisions at $\sqrt{s} = 7$ TeV in events with a single lepton, jets, and missing transverse momentum for $L = 36pb^{-1}$ (2011). arXiv:1107.1870. *Journal of High Energy Physics*.

Dissertation Thesis

Search for supersymmetry in pp collisions at $\sqrt{s} = 7$ TeV in events with a single lepton, b-tagged jets, and missing transverse momentum for $L = 5fb^{-1}$ (2013). <http://wto.web.cern.ch/wto/Dissertation.pdf>.

Work in Progress

Search for supersymmetry in pp collisions at $\sqrt{s} = 8$ TeV in events with a single lepton, b-tagged jets, and missing transverse momentum for $L = 20fb^{-1}$ (2013).

Software and Hardware Experiences

Programming Languages: C++, Python, Perl, HTML, CSS plus the usual scripting in Bash and C-Shell.

Analysis Softwares: ROOT analysis framework, CMS Software Framework (CMSSW), Pythia Particle Physics Simulator.

Electronics Development: Labview, Eagle, BatchPCB, Arduino Test Interfaces.

Scintillating Fiber Tracker: Prototyping of Fiber Tracker with Both Triggering and Data Acquisition Interfaces.

Silicon Strip Tracker: Tracker Safety System Installation. Commissioning of Silicon Strip Tracker within CMS. Monitoring and DAQ Expert for CMS Data Taking with Tracker.

Quantum Optics Lab: Optical Table Setups, Helium-Neon & Titanium-Sapphire Lasers, Avalanche PhotoDiodes (APD), Niobium Nitride Hot Electron Bolometer (NbN-HEB), PhotoMultiplier Tube (PMT).

Teaching

Teaching Assistant

General Physics, Electricity and Magnetism and Modern Physics: Fall 2008

Advance Physics Lab, : Spring 2007

Advance Physics Lab, : Winter 2007

Electronics Lab : Fall 2006

Honors, Awards, & Fellowships

Department of Physics Highest Honors Award, University of California, 2006.

Summer Undergraduate Research Fellowship, California Institute of Technology, 2005.

Jet Propulsion Lab Undergraduate Scholar, JPL, 2004.