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Education

- 2011: Ph.D., Physics
Michigan State University, East Lansing, MI, USA
Dissertation Title: Production of a top quark pair in association with an extra hard jet at the Tevatron.
Dissertation Adviser: Joey Huston
- 2009: M.S., Physics
Michigan State University, East Lansing, MI, USA
- 2001: M.S., Physics
University of Jordan, Amman, Jordan
Thesis Title: Pair distribution function for a gas model.
Thesis Adviser: Jamil Khalifeh
- 1998: B.S., Physics
University of Jordan, Amman, Jordan

Awards and Honors

- The 2009 “Kaplan Award for the Best Graduate Seminar”
Physics and Astronomy Department - Michigan State University
- Ranked first among the graduate students of the 2001 master-degree physics class.
Department of Physics - University of Jordan

Research Interests

Experimental high energy physics, Top quark physics.

Work Experience

- University of Jordan (2011 – present)
Assistant Professor
Designing and teaching a special course in collider phenomenology for the PhD-degree physics class. Teaching the PhD-degree electrodynamics and the undergraduate Quantum Mechanics courses.
- Michigan State University (2006 – 2011)
Research Assistant
As a topic for my dissertation, I performed a first measurement for the cross section of top quark pair with an additional hard jet using 4.1fb^{-1} of data.
- Western Michigan University, Kalamazoo, MI (2005 - 2006)
Teaching Assistant
Teaching introductory physics laboratory.

- The Intermediate University College, Amman, Jordan (2003-2004)
Lecturer
Teaching calculus-based and algebra-based general physics courses for a wide range of majors.
- University of Jordan (2000-2001)
Teaching Assistant
Teaching introductory physics laboratory.
- University of Jordan (1999-2000)
Research Assistant
Studying the magnetism of surfaces and interfaces.

Professional Experience

Fermi National Accelerator Laboratory, Office of Science / U.S. Department of Energy (June 2006 – present) Batavia, Illinois, USA

I do collaborate on the Collider Detector at FermiLab (CDF) experiment since June 2006, in which I study the production-decay mechanism, mass and other intrinsic properties for the top quark.

- I served as an Ace (June – September 2008) whose main job is to keep the detector running smoothly and safely and take preemptive actions to minimize experiment down time. My duties include running data acquisition and calibrations, investigating alarms, assisting in recovery procedures and monitoring CDF infrastructure systems (flammable gas, cryogenics, silicon cooling, rack protection etc).
- I served as a Consumer Operator (September 2010) who has to verify the quality of data being taken.

Publications

- Search for resonant production of $t\bar{t}$ pairs in 4.8 fb^{-1} of integrated luminosity of $p\bar{p}$ collisions at $\sqrt{s} = 1.96 \text{ TeV}$.
Aaltonen et al. (CDF Collaboration), Phys. Rev. D 84 (7), 072004
- Measurement of the top pair production cross section in the lepton+ jets channel using a jet flavor discriminant.
Aaltonen et al. (CDF Collaboration), Phys. Rev. D 84 (3), 031101
- Measurements of the top-quark mass and the $t\bar{t}$ cross section in the hadronic τ + jets decay channel at $\sqrt{s} = 1.96 \text{ TeV}$.
Aaltonen et al. (CDF Collaboration), Phys. Rev. Lett. 109 (19), 192001
- Measurement of the top-quark pair-production cross section in events with two leptons and bottom-quark jets using the full CDF data set.
Aaltonen et al. (CDF Collaboration), Phys. Rev. D 88 (9), 091103
- Measurement of the differential cross section $d\sigma/d(\cos \theta_t)$ for top-quark pair production in $p\bar{p}$ collisions at $\sqrt{s} = 1.96 \text{ TeV}$.
Aaltonen et al. (CDF Collaboration), Phys. Rev. Lett. 111 (18), 182002

Computer Skills

- Operating System: Linux – Unix - MS Windows
- Computer Languages: C++ - FORTRAN - Shell scripting (bash and tcsh)
- Others: ROOT data analysis framework – GDB – LaTeX - HTML