

Mandy Rominsky
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Education

University of Oklahoma, Norman OK
Ph.D., Particle Physics
Graduation Date: December 2009

New Mexico Institute of Mining and Technology, Socorro NM
B.S., Physics
Mathematics Minor
Graduation Date: May 2003

Employment History

Research Associate, Fermi National Accelerator Laboratory	Winter 2009 - present
Graduate Assistant, University of Oklahoma	Summer 2003 – 2009
Student Research Assistant, New Mexico Tech	Spring 2002- Spring 2003

Research Experiences

Physics analysis:

Measuring the W mass using the Full D0 Data Set 2012 – Present
DØ W Mass Group

The mass of the W boson is measured using the full data set from D0. We aim to make it the most precise measurement to date.

Search for Associated production of Charginos and Neutralinos 2010-2012
DØ New Phenomenon Group

Search for the associated production of charginos and neutralinos in final states with 2 leptons and an isolated track. In the absence of a signal, new limits can be set. In addition, the results will be presented in a truly model independent way.

Measuring the Dijet Mass Cross Section for Run IIa 2007-2010
DØ QCD Group (M. Strauss, D. Lincoln)

Measured the dijet mass cross section using Run IIa data from DØ. The measurement is the best one to date, extending the rapidity and mass range of the cross section, and can be used to improve the gluon PDF uncertainties.

Analysis of the $B \rightarrow J/\psi K^{*+} \pi^-$ Branching Ratio

2004-2009

OU High Energy Group (B. Abbott, M. Strauss)

Studying the branching fraction of B mesons using Run II data from the Tevatron. The measurement is performed using ratios of well measured branching fractions to poorly measured branching fractions, which reduces systematic uncertainties.

*Hardware Experience:***Straw Chamber R&D**

2010-present

Detector R&D for the new g-2 experiment at Fermilab. My main task is research and development of straw tracking chambers. Current work includes building a 20 straw prototype and setting up a test stand that includes a piece of the vacuum chamber from the previous g-2 experiment. I'm also involved in the simulation of the tracking system.

*Software/Detector Experience:***Lorentz Drift**

2011

I determined an updated set of Lorentz drift parameters for the SMT detector at D0. I used residuals (remove detector from fit, difference between hit and track position taken as residual) to determine how much the drift parameters needed to be changed. The improved values will be used from now on in all reconstructed D0 data.

CFT Cluster splitting studies

2010-2011

Study CFT clusters to see if a split/merge algorithm can be used. Also, I am working on determining the cluster center by using light yield information as opposed to the geometric center.

SMT Efficiency Task Force

2010

Produced samples with various SMT disks and layers removed to help determine the SMT efficiency. This will be used in MC simulations.

Jet p_T Resolution Studies

2007-2009

Performed a study of the jet p_T resolutions for back-to-back dijet events in data, with additional corrections determined using Monte Carlo. This study was then used in a fast Monte Carlo that determines corrections and uncertainties for all QCD jet analyses at D0.

Level 2 trigger system

2006-Present

As a Level 2 expert, I maintained and updated the monitoring code, which was written using Python and wxPython. I also carried the L2 expert pager, where my duties were to solve problems with the L2 system. In addition, I helped train three new Level 2 experts.

Data processing 2007-2008

Part of the first team to use grid computing to reprocess DØ data. This involved testing remote sites to ensure they could work as part of the grid, running scripts to submit jobs and solving problems that arose during production runs.

Tracking 2006–2007

Prepared data samples for the tracking group to use in high luminosity studies.

Programming Skills 2006–Present

C++

Python and wxPython

ROOT

Selected Talks

“*The New g-2 Experiment at Fermilab*” M. Rominsky, colloquium at University of Nebraska, Lincoln, March 2012.

“*The New g-2 Experiment at Fermilab*” M. Rominsky, seminar at University of Virginia, March 2012.

“*Measuring the Dijet Mass Cross Section at DZero*” M. Rominsky, seminar at Michigan State University, April 20, 2010.

“*Measurement of the Differential Dijet Mass Cross Section at the Tevatron*” M. Rominsky, representing the DØ Collaboration, parallel session at the XVII International Workshop on Deep-Inelastic Scattering and Related Subjects, April 26-30 2009, Madrid Spain.

“*Measurement of the Differential Dijet Mass Cross Section at the Tevatron*”, New Perspectives Conference, June 6 2009, Fermilab.

Extracurricular Activities and Awards

Fermilab Graduate Student Association officer from 2006 – 2007. Duties included helping new graduate students adjust, a trip to Washington DC to educate congress on high energy physics and organizing the annual triathlon.

Outstanding Teaching Assistant for 2006, awarded by the American Association of Physics Teachers.

Primary Author Publications

“Measurement of the Dijet Mass Cross Section Using pp(bar) Collisions at $\sqrt{s} = 1.96$ TeV”, Phys Letters B, Volume 693, 531-531 (2010).

“Measurement of the Dijet Mass Cross Section Using pp(bar) Collisions at $\sqrt{s} = 1.96$ TeV”, Conference proceedings for XVII International Workshop on Deep-Inelastic Scattering and Related Subjects.

Selected Publications

“Determination of the Strong Coupling Constant from the Inclusive Jet Cross Section in pp(bar) Collisions at $\sqrt{s} = 1.96$ TeV”, Phys Rev D 80, 111107 (2009).

“Measurement of the Dijet Angular Distributions at $\sqrt{s} = 1.96$ TeV and Searches for Quark Compositeness and Extra Spatial Dimensions”, Phys Rev Letters 103, 191803 (2009).

“First Measurement of the Dijet Mass Spectrum in the TeV Regime”, M. Rominsky, M. Strauss, M. Wobisch, D. Lincoln, DØ Note 5701.

“Jet p_T resolutions as a function of η_{det} in Run IIa using Final J4S”, M. Rominsky, DØ Note 5908.

“DØJetSim - A Parameterized Detector Simulation for Jet Physics”, M. Wobisch, Z. Hubacek, A. Kupco, N. Parua, M. Rominsky, L. Sonnenschein, M. Voutilainen, DØ Note 5703.