



# PHYSICS AND ASTRONOMY SEMINAR

## Dr. Matthew Jones

Purdue University

### “Quarkonium Production and Polarization at Hadron Colliders”

#### Abstract

Since they were first observed over 15 years ago, the production of  $J/\psi$  and Upsilon mesons have been unexpectedly challenging to model using quantum chromodynamics. Various models that were constructed to accommodate the surprisingly large heavy quarkonia production cross sections give very different predictions for the expected polarization, and different measurements that should be sensitive to polarization not only disagree with these models, but also with each other. In this seminar, I will describe the measurements carried out at the Fermilab Tevatron that led to this state of confusion, new experimental observables proposed to help understand the current situation and a new measurement from the CDF experiment that provides additional insight into the nature of quarkonium production in high energy hadron collisions.

Monday, October 24, 2011

3:30 p.m.

Elliott Building

Room 162