



# CERN Joint EP/PP Seminars

SPEAKER: Pierre Petroff (LAL/IN2P3)  
TITLE: **Measurement of the W boson mass using 1 fb<sup>-1</sup> of Dzero data from Run II**  
DATE: Tue 05/05/2009 16:30  
PLACE: Main Auditorium\*\*

## ABSTRACT

The knowledge of the W boson mass is currently the limiting factor in our ability to tighten the constraints on the mass of the Higgs boson. Improving the measurement of the W boson mass, then, is an important contribution to our understanding of the electroweak interaction, and, potentially, of how electroweak symmetry is broken. This talk will present a measurement of the W boson mass using data taken from 2002-2006 with the Dzero detector, corresponding to a total integrated luminosity of 1 fb<sup>-1</sup>. Using the W → e ν decay mode we measure:  $M_W = 80401 \pm 21(\text{stat}) \pm 38(\text{syst}) \text{ MeV}$  with a total uncertainty of 43 MeV. This agrees with the world average and is slightly more precise than any other single measurement.