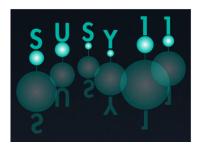
## **Supersymmetry 2011 (SUSY11)**



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## New Vector Boson Near the Z-pole and the Puzzle in Precision Electroweak Data

Thursday, 1 September 2011 12:15 (30 minutes)

We show that a Z' with suppressed couplings to the electron compared to the Z-boson, with couplings to the b-quark, and with a mass close to the mass of the Z-boson, provides an excellent fit to forward-backward asymmetry of the b-quark and R\_b measured on the Z-pole, near the Z-pole and above the Z-pole, and to A\_e obtained from the measurement of left-right asymmetry for hadronic final states. It also leads to a significant improvement in the total hadronic cross section on the Z-pole and R\_b measured at energies above the Z-pole. In addition, with a proper mass, it can explain the excess of  $Zb\bar{b}$  events at LEP in the 90-105 GeV region of the  $b\bar{b}$  invariant mass. With additional small flavor violating couplings it can explain the discrepancy in muon g-2, and the like-sign dimuon anomaly measured by D0.

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