Contribution ID: **40** Type: **not specified**

Prospects and Blind Spots for Neutralino Dark Matter

Thursday 29 August 2013 18:06 (24 minutes)

Using a simplified model framework, we assess observational limits and discovery prospects for neutralino dark matter. Experimental constraints can be weakened or even nullified in regions of parameter space near 1) purity limits, where the dark matter is mostly bino, wino, or Higgsino, or 2) blind spots, where the relevant couplings of dark matter to the Z or Higgs bosons vanish identically. We analytically identify all blind spots relevant to spin-independent and spin-dependent scattering and show that they arise for diverse choices of relative signs among M1, M2, and μ. At present, XENON100 and IceCube still permit large swaths of viable parameter space, including the well-tempered neutralino. On the other hand, upcoming experiments should have sufficient reach to discover dark matter in much of the remaining parameter space.

Presenter: PINNER, David

Session Classification: Particle physics