Contribution ID: **114** Type: **not specified**

Particle Physics Implications and Constraints on Dark Matter Interpretations of the CDMS Signal

Tuesday 27 August 2013 17:18 (24 minutes)

Recently the CDMS collaboration has reported an excess of events in the signal region of a search for dark matter scattering with Silicon nuclei. Three events on an expected background of 0.4 have a significance of about 2 sigma, and it is premature to conclude that this is a signal of dark matter. Nonetheless, it is important to examine the space of particle theories capable of explaining this excess, to see what theories are capable of explaining it, and how one might exclude it or find corroborating evidence in other channels. We examine a simplified model containing a scalar mediator particle, and find regions consistent with the CDMS observations. Bounds from colliders put important restrictions on the theory, but viable points, including points leading to the observed thermal relic density, survive.

Presenter: WIJANGCO, Alexander

Session Classification: Particle physics