



Contribution ID: 13

Type: **Presentation**

Constraints on Self Interacting Dark Matter from IceCube Results

Tuesday, June 24, 2014 6:00 PM (15 minutes)

If dark matter particles self-interact, their capture by astrophysical objects should be enhanced. As a consequence, the rate by which they annihilate at the center of the object will increase. If their self scattering is strong, it can be observed indirectly through an enhancement of the flux of their annihilation products. Here we investigate the effect of self-interaction on the neutrino flux produced by annihilating dark matter in the center of the Sun. We consider annihilation into two channels: W^+W^- (or $\tau^+\tau^-$ for a dark matter mass below the W mass) and $b\bar{b}$. We estimate the event rate in the IceCube detector, using its 79-string configuration, and compare our prediction to their experimental results, hence probing dark matter self interacting models.

Primary authors: PEREZ DE LOS HEROS, Carlos (Department of Physics and Astronomy, Uppsala University); ROBERTSON, Denis (Instituto de Fisica, Universidade de Sao Paulo); ALBUQUERQUE, Ivone (Instituto de Fisica - Universidade de Sao Paulo)

Presenter: ROBERTSON, Denis (Instituto de Fisica, Universidade de Sao Paulo)

Session Classification: Dark Matter: Indirect Detection

Track Classification: Dark Matter Indirect Detection