



Contribution ID: 43

Type: **not specified**

The Neutron Decay Anomaly: how it may be a window to new physics

Thursday 4 October 2018 17:15 (1 hour)

In this talk I will first review a long-standing discrepancy between the neutron lifetime as measured in beam and in bottle experiments. If this discrepancy is not due to a systematic error, it may be due to novel mechanisms for neutron transmutation into new, as yet unknown elementary particles. These particles would be electrically neutral, or so-called “dark”. We will explain several scenarios for the possibility of neutron transmutation into dark particles. For example, in one interesting scenario the products of the neutron transmutation include a monochromatic photon with energy in the range $0.782 \text{ MeV} - 1.664 \text{ MeV}$ and this is predicted to occur in 1% of all neutron decays. We will also describe ongoing experiments looking directly to establish or rule out the “dark decay” hypothesis.

Presenter: GRINSTEIN, Benjamin (Univ. of California San Diego (US))

Session Classification: Festive Colloquim