



**Old Dominion University
Department of Physics**

Colloquium

Tuesday, November 18, 2014

**"Scalar Dark Matter Candidates in Two Inert Higgs
Doublet Model"**

**Dr. Elaine Fortes
University of Maryland and NASA**

The IDMS3 model is an extension of Standard Model which includes two inert doublet scalars stabilized by a S_3 symmetry. This model provide new candidates for dark matter. We will present an analysis for this model considering two scenarios: i) two of the scalars in each charged sector are mass degenerated due to a residual Z_2 symmetry, ii) there is no mass degeneracy because of the introduction of soft terms that break the Z_2 symmetry. Both scenarios provide dark matter candidates and depending on the parameter choice pseudoscalar dark matter candidates can also be accommodated. One other interesting aspect of the IDMS3 is in the difference in the Higgs's boson's 2 photon decay ratio $R_{\gamma\gamma}$ compared to the one inert doublet model.

Presentation: **OCNPS 200 @ 3:00 pm**
Refreshments: **OCNPS Atrium @ 2:30 pm**

All interested persons are cordially invited to attend.