# Columbia University
# Department of Physics

## Theory Seminar

### "Model Independent Direct Detection"

**Ami Katz,**
Boston University

I will describe a model-independent approach to parameterizing possible dark-matter (DM) interactions with nucleons. The idea is to require only terms consistent with Galilean invariance and the rules of quantum mechanics. This general framework leads to novel ways with which nuclei can interact with the DM.

Besides the standard spin-dependent and spin-independent interactions, there are three more types of interaction, sensitive to nuclear properties of targets which were not considered previously. Moreover, interference effects between operators lead to a rich parameter space. I will report on the latest bounds on this parameter space, focusing on the complementarity of different experiments.

**Monday, April 1, 2013 / 831 Pupin Hall / 2:10PM**