



Contribution ID: 24

Type: **not specified**

## Here be Dragons: The Unexplored Continents of the CMSSM

*Monday 6 May 2013 18:15 (15 minutes)*

Knowing the Higgs boson mass, along with precision measurements of the dark matter relic density, motivates a fresh look at the CMSSM/mSUGRA supersymmetry breaking boundary conditions. Four real parameters determine the superpartner spectrum. Various “continents” consisting of non-excluded models can be categorized by their dark matter dynamics. The following mechanisms manifest: well-tempering, resonant pseudo-scalar Higgs annihilation, neutralino/stau coannihilations and neutralino/stop coannihilations. Benchmark models are provided which characterize the viable regions. The expected visible signals of each are described, with an emphasis on the direct and indirect detection of dark matter. The parameter space spans a finite volume, which can be probed in its entirety utilizing “human-buildable” Experiments.

**Primary author:** COHEN, Timothy (SLAC)

**Presenter:** COHEN, Timothy (SLAC)

**Session Classification:** DM I