Contribution ID: **176** Type: **parallel talk**

Dark Matter Considerations in the E(6)SSM

Monday 7 May 2012 18:00 (15 minutes)

Abstract:

The E(6)SSM is a supersymmetric extension to the Standard Model with an E(6) grand unification group. The low energy gauge group has an extra U(1) and anomaly cancellation is ensured since the matter fields form complete 27 representations of the E(6).

Two dark matter scenarios are explored. In one the dark matter matter comes from the approximately decoupled "inert" neutralino sector. This model leads to interesting collider phenomenology, but is now severely challenged, by direct detection experiments, as an explanation for all of the observed cosmological dark matter.

In the other scenario, known as the EZSSM, the dark matter candidate is approximately the bino — the fermionic partner of the U(1) hypercharge gauge boson. Two inert neutralinos are massless and contribute to the expansion rate of the universe prior to the synthesis of helium-4.

Author: Dr HALL, Jonathan (University of Southampton)

Presenter: Dr HALL, Jonathan (University of Southampton)

Session Classification: DM I