Contribution ID: **38**   Type: **Oral Contributions**

Momentum-dependent dark matter couplings and monojets

Friday 16 September 2016 15:40 (20 minutes)

Momentum-dependent couplings between dark matter and the visible sector can appear in models where dark matter is a pseudo-Nambu-Goldstone boson, a scalar field associated with the spontaneous breaking of a global symmetry at a given energy scale. From a low-energy perspective, these couplings appear as non-renormalizable operators involving derivatives at the effective Lagrangian level. The momentum dependence results in interesting differences in the jet transverse momentum distribution with respect to conventional models commonly used to interpret monojet searches for dark matter at the Large Hadron Collider. I will discuss the monojet constraints on a simple model involving derivative couplings and compare these to those obtained when dark matter is assumed to couple to the visible sector in a more conventional manner. I will also briefly comment on the perspectives of distinguishing the two scenarios in future LHC searches.

Summary

Primary author: Dr ANDREAS, GOUDELIS (HEPHY - Vienna)

Presenter: Dr ANDREAS, GOUDELIS (HEPHY - Vienna)

Session Classification: Dark Matter & colliders

Track Classification: Dark matter & colliders