Contribution ID: **21** Type: **not specified**

Dark matter electron anisotropy: a universal upper limit

Wednesday 15 June 2011 15:00 (12 minutes)

Indirect searches of particle Dark Matter (DM) with high energy Cosmic Rays (CR) are affected by large uncertainties, coming both from the DM side, and from poor understanding of the astrophysical backgrounds. We show that, on the contrary, the DM intrinsic degree of anisotropy in the arrival directions of high energy CR electrons and positrons does not suffer from these unknowns. Furthermore, if contributions from possible local sources are neglected, the intrinsic DM anisotropy sets the maximum degree of total anisotropy. As a consequence, if some anisotropy larger than the DM upper bound is detected, its origin could not be ascribed to DM, and would constitute an unambiguous evidence for the presence of astrophysical local discrete sources of high energy electrons and positrons. The Fermi-LAT will be able to probe such scenarios in the next years.

Primary author: Dr BORRIELLO, Enrico (Università degli Studi di Napoli "Federico II")

Co-author: Dr MACCIONE, Luca (DESY)

Presenter: Dr BORRIELLO, Enrico (Università degli Studi di Napoli "Federico II")