



ID de Contribution: 53

Type: **Non spécifié**

Scalar Dark Matter and DAMA

jeudi 12 mars 2009 17:00 (8 minutes)

A light scalar WIMP is studied in view of the recent results of the DAMA collaboration.

In a scenario where both the WIMP's annihilation and its elastic scattering on nuclei occur dominantly through Higgs exchange, a one-to-one relation between the WIMP's relic density and its spin-independent direct detection rate is established. The ratio of the relevant cross sections depends only on the dark matter mass if the range allowed by the DAMA results ($m < 10$ GeV) is considered. We show that if such a light scalar WIMP possesses a direct detection rate compatible with DAMA, it naturally obtains a relic abundance in agreement with WMAP. Indirect detection both with gammas from the Galactic centre and neutrinos from the Sun opens possibilities to test this light dark matter scenario.

Auteurs principaux: Prof. TYTGAT, Michel H.G. (Service de Physique Théorique, Université Libre de Bruxelles, Boulevard du Triomphe, CP225, 1050 Brussels, Belgium); Mlle ANDREAS, Sarah (Institut für Theoretische Physik E, RWTH Aachen University, D-52056 Aachen); Prof. HAMBYE, Thomas (Service de Physique Théorique, Université Libre de Bruxelles, Boulevard du Triomphe, CP225, 1050 Brussels, Belgium)

Orateur: Mlle ANDREAS, Sarah (Institut für Theoretische Physik E, RWTH Aachen University, D-52056 Aachen)

Classification de Session: Young Scientists Forum 3