

Invited seminars

CP3 Invited Seminar - Astrophysical properties of mirror dark matter - Dr. Paolo Ciarcelluti

Wednesday 30 November 2011 from 13:00 to 14:00 (Europe/Brussels)
at Cyclotron (1-3rd floor-E.349 - Seminar room (E.349))

Description Mirror matter is a self-collisional dark matter candidate. If exact mirror parity is a conserved symmetry of nature, there could exist a parallel hidden (mirror) sector of particles which have the same masses and physical laws of our (visible) sector (except for the handedness of weak interactions). The two sectors interact each other predominantly via gravity, therefore mirror matter is naturally "dark". This candidate is compatible with recent results of DAMA and other direct detection experiments.

In addition, it provides a possible intriguing interpretation for the recent observations of masses and radii of neutron stars. The most promising way to test this dark matter candidate is to look at its astrophysical signatures, as Big Bang nucleosynthesis, primordial structure formation and evolution, cosmic microwave background and large scale structure power spectra, dark stellar structures. I review the status of research on these topics.

