



UNIVERSITÀ DEGLI STUDI DI MILANO
SCUOLA DI DOTTORATO IN FISICA
ASTROFISICA E FISICA APPLICATA

Physics Colloquia 2010/2011

The nature of dark matter

The study of the motion of stars and interstellar gas indicates that the galaxies, including our own Milky Way contain a large amount of "Dark Matter" that is observable only because of its gravitational effects.

The Dark Matter plays also a fundamental role in the dynamics of galaxy clusters and in the evolution of the entire universe.

A leading theoretical explanation for the nature of the Dark Matter predicts that it is composed of yet undiscovered Weakly interacting Massive Particles that are a relic from the early universe.

If this explanation is valid the new particles could be produced and detected at LHC.

The galactic Dark Matter particles can also be observed detecting their elastic scattering rate with nuclei of ordinary matter.

Another possibility is to observe the products (like positrons, anti-protons, photons and neutrinos) of their self-annihilation in the Milky Way.

This talk will discuss possible hints of signals, and the perspectives of future studies.

FEB

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Gli incontri si terranno alle **ore 15:00**
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