CERN Joint EP/PP Seminars

SPEAKER: Teresa Marrodan Undagoitia (University Zurich)

TITLE: **Direct dark matter search with the XENON100 experiment**

DATE: Mon 19/04/2010 11:00

PLACE: Council Chamber

ABSTRACT

During the last years, liquid noble gases have proven a great potential as detector medium for dark matter searchs.
Among them, xenon has the advantage of combining a high WIMP(Weakly
Interacting Massive Particle)sensitivity with an excellent self-shielding capability for background reduction. A common technique, which has been demonstrated, e.g. by the XENON10 experiment, is to employ a two-phase TP(Time Projection Chamber), where the produced light and charge is detected by PMTs.
XENON100 is a 65kg active volume detector placed at the Gran Sasso underground laboratory in Italy. Currently, the detector is taking dark matter data. Due to its low-radioactivity materials (designed for 10mDRU)and its large mass, it would be able to reach a sensitivity for the WIMP-nucleus cross section of 2x10^-45cm2 at 100GeV WIMP mass.
After a short introduction to dark matter and its detection possibilities,the XENON100 detector, its calibration and characterization will be explained. The status and first results of the XENON100 experiment will be presented as well.

Organised by: Maria Spiropulu/PH-EP.....Tea and Coffee will be served at 10H30