

## **Title: Diffusive propagation of extragalactic cosmic rays**

Speaker: Maria Silvia Mollerach  
CONICET - Centro Atomico Bariloche - Argentina

### **Abstract**

At energies above  $\sim 10^{18}$  eV cosmic rays are thought to be of extragalactic origin. The reason is that it is difficult to find objects in the Galaxy that could accelerate them to those energies and also the lack of definite anisotropy signals correlating their arrival direction distribution with the Galaxy. It is thus very important to study the propagation of ultra high energy cosmic rays (UHECRs) from their extragalactic sources to the Earth.

The intergalactic medium is permeated by radiation fields and by magnetic fields. Cosmic rays lose energy, and photodisintegrate in the case of nuclei, by the interaction with those photons. Their trajectories are also deflected by the intervening magnetic fields, and could even make them diffuse depending on the strength of the field. The effects on the spectrum, mass composition and arrival direction distribution observed at Earth will be discussed. In particular the expected large angular scale distribution of UHECRs diffusing from extragalactic sources will be presented.