Contribution ID: **43** Type: **Invited talk**

Dark matter and the first stars

Thursday 11 November 2010 09:30 (30 minutes)

I will outline the general framework within which self-annihilating, Weakly Interacting massive models of Dark Matter can affect the first stars (Population III).
Self annihilation of DM particles during he gas cooling and collapse phase may affect weakly the properties of the cloud; we have found that however even at late stages during star formation this mechanism is not likely to provide an energy source such to stop the collapse of the cloud.
Once a pre-MS hydrostatic object is formed, capture of DM particles via weak elastic scattering on the material of the proto-star can drive a DM powered phase that may in principle prolonge the lifetime of the star. I will discuss the general mechanisms as well as a detailed study of the two phases.

Primary author: Dr IOCCO, Fabio (Institut d'Astrophysique de Paris)

Presenter: Dr IOCCO, Fabio (Institut d'Astrophysique de Paris)

Session Classification: Session 5

Track Classification: Dark Stars