Contribution ID: **78** Type: **not specified**

The multiphase baryon cycle in galaxies and future prospects with the EELTs (Claudia Cicone) (I)

Friday, 13 September 2019 09:00 (25 minutes)

Galaxy formation and evolution are driven by the (re)cycling of baryons in and out of galaxies. Active galactic nuclei and star formation can generate galaxy-scale outflows and fountains, which in part feed the extended interstellar and circum-galactic medium (ISM and CGM) reservoirs, and in part escape the galaxy halo hence enriching the intergalactic medium (IGM). In turn, cosmic inflows from the IGM and CGM constantly replenish the ISM with new fuel. Multi-wavelength, multi-epoch (from z=0 to z>7) observations are needed to constrain the physical properties of the multiphase baryon cycle and its evolution across cosmic times. Moreover, these observations require extremely high sensitivity, as well as high spatial and spectral resolution to capture the low surface brightness components of gas flows, and at the same time resolve their complex morphological and kinematical structures. The ELT will have a pivotal role in the investigation of the multiphase baryon cycle from z=0 to z>7 in the optical/IR regime, best complementing and strengthening the observations that will be carried out in the other wavelength windows by other facilities such as ALMA.