

Plenary Talk

## GLIMPSES OF COSMIC STRUCTURE FORMATION WITH DEEP SURVEYS

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The deepest yet Sunyaev-Zel'dovich effect survey by the South Pole Telescope has revealed massive galaxy cluster populations extending to  $z \sim 1.7$ . Studies of the galaxy populations within these systems can now be carried out within the same portion of the cluster virial region over this full redshift range. Deep HST and Spitzer followup observations of the five most distant systems enable a precise examination of emergence of the passive galaxy populations in what are among the first massive galaxy clusters to have formed. Next generation surveys in the near infrared and optical by Euclid and LSST will deliver deep survey data over large portions of the extragalactic sky, enabling studies of the emergence of cosmic structure not only within the virial regions of selected massive galaxy clusters but also in the hierarchy of lower mass structures that emerge and evolve with cosmic time.