

**Jeudi 7 février 2019 à 11h30 (IAS, bâtiment 121, salle 1-2-3)**

**Probing Cosmology with Dark Matter Halo Sparsity**

**Pier Stefano Corasaniti (LUTH, Observatoire de Paris)**

Observations of galaxy clusters provide a wealth of information on the cosmic matter content, state of expansion and the distribution of initial matter density fluctuations, that is complementary to that inferred from other cosmic probes. In this talk I will discuss the use of the dark matter halo sparsity, which characterizes halos in terms of the ratio of masses within radii which enclose two different overdensities, as a proxy of the cosmological imprint encoded in the mass profile halos. I will show the properties of the halo sparsity as inferred from N-body simulation halo catalogs and present its application to cosmological analyses of galaxy cluster observations.