

Synergies between IRAM observations and intensity mapping surveys

Guilaine Lagache¹

¹ LAM, UMR7326 du CNRS, Laboratoire d'Astrophysique de Marseille, 38 rue Frédéric Joliot Curie, 13013, Marseille-France

Intensity mapping measures the large-scale spatial fluctuations in the collective emission from all of the luminous sources emitting in some convenient spectral lines. It is naturally sensitive to the radiation from faint sources and from the diffuse intergalactic medium. It has also the advantage of measuring fluctuations on large regions of the sky (few square degrees) in a large frequency, and thus redshift, range. Currently, considerable attention is being paid to intensity mapping using the neutral hydrogen HI 21cm line, the CO and the [CII] lines. Main goals are to constrain the cosmological model, the epoch of reionization, as well as structure growth. These large-scale structure surveys complement traditional galaxy surveys that are limited to studying only sources that lie above survey flux limits. In this talk I will explore the complementarity between the two approaches and will highlight how IRAM detailed observations can help interpreting the large-scale structure surveys.