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Alice Concas - Molecular gas and dust extinction relation revealed by ALMAQUEST

Monday, 12 June 2023 14:30 (20 minutes)

The relation between the molecular gas content and the dust screen surrounding HII regions is a powerful tool for galaxy evolution studies. In this talk, I will show how to explore such relation on a sample of 46 nearby galaxies in the framework of the ALMaQUEST (ALMA-MaNGA QUEnching and STar formation) survey, combining new CO(1-0) maps with kpc resolution from ALMA observations with IFU spectroscopic datacubes from MaNGA. I will show the existence of the empirical relation between the molecular gas surface density traced by the CO(1-0) luminosity and the dust extinction inferred by the Balmer Decrement (BD=Hα/Hβ) on a kiloparsec scale. I will discuss the possibility to use the BD to probe the spatially resolved distribution of cold gas in nearby galaxies in the absence of direct submillimeter observations.

Session Classification: Local Universe