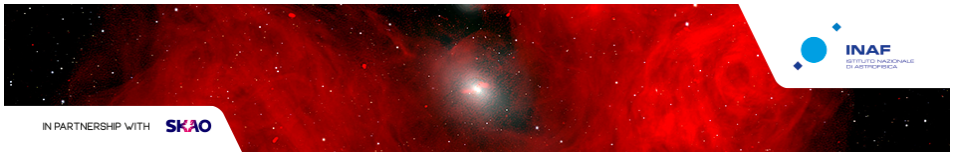

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The MeerKAT HI view of NGC 1365, the Great Barred Spiral Galaxy

Observations of the interstellar medium (ISM) are key to deciphering the physical processes regulating star formation in galaxies, one of the main drivers of galaxy evolution. The mechanisms that transform the overall galactic gas content into stars, such as gas accretion and outflows, control star formation in typical nearby galaxies.

Only a large and coherent dataset of all components of the ISM (atomic and molecular gas, dust, and metals) can provide a definitive view of the ISM in galaxies. By producing an unprecedented set of scaling relations between the various components of ISM e other main galaxy properties (e.g., stellar mass, star-formation rate) in DustPedia galaxies, we found strong indications that the role of HI in regulating star formation may have been down-played so far. While at global scales the role of the atomic gas is well-defined, high resolution HI maps can allow us to re-define it at intrinsic scales of the star formation process.

I will present **MeerKAT** HI data of NGC 1365, also known as the Great Barred Spiral Galaxy, a double-barred prominent spiral galaxy belonging to the Fornax cluster. I will compare these **MeerKAT** HI data with the molecular gas (ALMA), dust (DustPedia), and gas-phase metallicity ones, drawing conclusions on the interplay between the various ISM components in NGC 1365.

Exploring the cosmic evolution of the gas content of galaxies is a key science driver for **SKA**. High sensitivity and high angular resolution observations of HI in nearby galaxies will definitively clarify the role of HI in the star formation process and will serve as a unique test bed for the upcoming surveys with **SKA**.

Reasearch area

HI galaxy science

Primary author: CASASOLA, Viviana (Istituto Nazionale di Astrofisica (INAF))

Presenter: CASASOLA, Viviana (Istituto Nazionale di Astrofisica (INAF))

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