ID 166

Tipo de Comunicación: Oral

Sesión Científica: Galaxias y cosmologia

Titulo: The environmental dependence of the HI mass function in ALFALFA 70%

Nombre (Autor que presenta): Michael

Apellidos (Autor que presenta): Jones

Apellidos y nombre de los autores: Michael Jones, Emmanouil Papastergis, Martha Haynes, Riccardo Giovanelli

Resumen:

The HI galaxy mass function represents a key component in our understanding of the gas content of galaxies, and studying how it evolves with environment is fundamental to developing a complete picture of galaxy evolution. We use the ALFALFA 70% catalogue, the largest uniform catalogue of extragalactic HI sources to date, to explore the environmental dependence of the HI mass function based on the projected neighbour densities in both SDSS and the 2MASS Redshift Survey. The Schechter function `knee\' mass is found to increase by approximately 0.2 dex from the lowest to highest quartile of neighbour density. This dependence is seen only when environment is defined using SDSS neighbours, and not with 2MRS. We interpret this as an indication of local, rather than larger scale, environmental dependence. In addition, we find no evidence for any change in the low-mass slope based on either definition of neighbour density, which is in tension with numerous survey s of individual galaxy groups, which typically measure a flat slope. However, our latest results now give tentative evidence of changes in both the `knee\' mass and the low-mass slope dependent on the largest scale structures in the local Universe, potentially providing a resolution to this tension and others.