

Not all the action is in clusters: environmental effects on field galaxies

Tuesday 4 June 2024 09:45 (20 minutes)

Galaxies inhabit a wide range of environments and therefore are affected by different physical mechanisms. While environmental effects are typically deemed significant mainly within galaxy clusters, even outside clusters, galaxies can be significantly affected by external processes connected to their position within the cosmic web. Exploiting the data from the GAs Stripping Phenomena in galaxies (GASP) survey I will discuss the multitude of mechanisms that can affect galaxies in isolation, groups and filaments. Spatially resolved maps combined with the knowledge of the hosting environment are indeed very powerful for classifying galaxies by physical process. I will show how a single group can host galaxies undergoing many different processes, such as starvation, ram pressure stripping and gas accretion. I will also show how filaments can assist gas cooling and increase the star formation in the densest regions in the circumgalactic gas of the galaxies flowing through them. I will then show examples of galaxy-galaxy interactions, mergers, and cosmic web stripping. I will emphasise the successes and limitations of a visual optical selection in identifying the processes that deplete galaxies of their gas content and probes the power of IFU data in pinning down the acting mechanism. Future facilities will allow to perform similar analyses at higher redshifts.

sessioni congresso

Galassie e Cosmologia

Primary author: VULCANI, Benedetta (Istituto Nazionale di Astrofisica (INAF))

Presenter: VULCANI, Benedetta (Istituto Nazionale di Astrofisica (INAF))

Session Classification: Galassie e Cosmologia