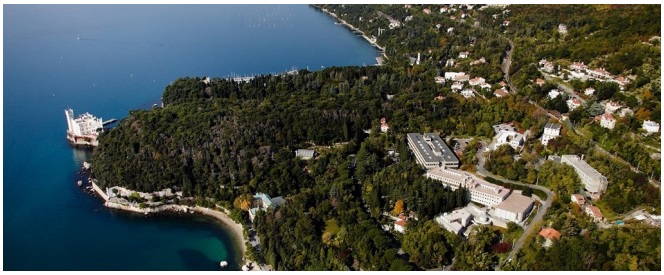

Contribution ID: **105** Type: **not specified**

# Dark matter free dwarf galaxies formed from the tentacles of jellyfish galaxies

*Tuesday 29 August 2023 15:50 (25 minutes)*

When falling into a galaxy cluster, galaxies experience the loose of gas due to ram pressure stripping. In particular disk galaxies loose gas from their disks and very large tentacles (in the order of hundreds of kpc) can be formed. Because of the morphology of these stripped galaxies they have received the name jellyfish galaxies. It has been found that star formation is triggered not only in the disk, but also in the tentacles of such jellyfish galaxies. The star regions formed in the tentacles of those galaxies could be as massive as 3e7 solar masses and have the sizes > 100 pc. Interestingly, these parameters in mass and size agree with those of ultra compact dwarf galaxies. In this work we get use of the state of the art magento-hydrodynamical cosmological simulation Illustris-TNG50, to study the most massive jellyfish galaxies which present large (and massive) tentacles. Our aim was to analyze the star formation regions in the tentacles of jellyfish galaxies. We find that in the tentacles of jellyfish TNG50 galaxies, star formation is triggered by ram pressure stripping and regions with masses > 1e7 solar masses are formed. These regions show defined radial distribution with half-mass radius of 1 kpc, typical of dwarf galaxies. Moreover, these regions are gravitationally self-bound. All and all we identify for the first time a new type of dwarf galaxy, which by construction lacks of a dark matter halo.

**Presenter:** LORA, Veronica

**Session Classification:** Parallel