Contribution ID: **93** Type: **not specified**

Il potenziale di misurare le distanze dalle fluttuazioni di brillanza superficiale nell'imaging di Euclid

Wednesday 4 June 2025 15:37 (12 minutes)

Robust distance estimates are crucial for interpreting observational results. They are necessary to map the Universe, constrain physical properties of galaxies, and can be used to test tensions in the Hubble constant. In the nearby Universe, where peculiar velocities dominate, there is a specific need for redshift-independent distances. Surface brightness fluctuations (SBF) can be used to measure such distances from photometry alone, offering a powerful method to obtain distances in the era of large surveys. The SBF signal is due to the statistical variation in the number of stars that fall on a given resolution element of a detector for semi-resolved galaxies, with the amplitude of the fluctuations scaling with the distance; as the resolution of detectors increases, we can push this technique to larger distances, potentially reaching ~50 Mpc with Euclid and ~300 Mpc with JWST. At INAF-OAAb, we are developing a largely automated python code to efficiently measure the SBF signal in upcoming large datasets. I will introduce the code, and present some the results of our early tests using Euclid imaging.

Presenter: HABAS, Rebecca Ann (Istituto Nazionale di Astrofisica (INAF))

Session Classification: La gravità, la materia oscura e le tensioni cosmologiche: il contributo di JWST, Euclid (chair: P. Rosati)