Untangling XUV galaxies from GLSB galaxies

XUV galaxies are a class of galaxies presenting low surface brightness (LSB) extended components identified through their extended UV emission, tracing star formation in the outermost regions. Recent studies have confirmed a strong interest in this type of galaxies, including the detection of a XUV galaxy at intermediate redshift (0.67, Pandey et al 2026) highlighting their relevance beyond the local Universe.

A possible link between XUV galaxies and Giant LSB (GLSB) galaxies was discussed for Malin-1 and UGC1382 (Boissier et al. 2008, Hagen et al 2016). Since GLSB galaxies are generally defined as such in the optical, deep optical data of XUV galaxies are needed to investigate further this link.

In this presentation, I will present recent results (Bernaud et al. 2025, Bernaud et al. 2026 in preparation) revealing a diversity among XUV when observed in the optical, from XUV galaxies presenting similar properties to GLSB (Malin-1 like), to Malin-1 opposites, with a focus on the role of the environment on their formation and evolution.

In this context, upcoming large and deep surveys such as LSST will provide opportunities to study a large number of XUV galaxies and their optical counterpart across a range of environments.