

Title

Cosmic Magnetisers unveiled: Exploring magnetised galactic outflows in dwarf galaxies

Abstract

We aim to investigate the magnetic field (MF) configuration and galactic outflows in five irregular starburst dwarf galaxies. We request 31.25hrs of L-band data in full polarisation mode and plan to use state-of-the-art simulations to study the MF and cosmic-ray (CR) transport in these galaxies. As dwarfs are considered to be excellent candidates for cosmic magnetisers in the early Universe, our results can shed light on the magnetisation of the interstellar medium, the strength and configuration of the MF, and outflow processes far into the intergalactic medium. The individual dwarf galaxies present a diverse range of morphologies, shapes, and evolutionary stages, making them representative samples of the overall dwarf galaxy population. By investigating the MF and CR transport, we aim to determine whether a highly ordered MF at the galaxy edges and a turbulent MF towards the core are common in such galaxies, as proposed in a previous study (NGC 1569).