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# The turbulent gas and magnetic structure of two nearby filamentary clouds

## Abstract

The nearby Reticulum and Eridu clouds share many traits. Both are filaments of atomic gas, partially crossing the low-density region of the Local Valley at comparable distances. Both extend along ordered bundles of magnetic-field lines that are steeply inclined to the Galactic plane and nearly perpendicular to the local interstellar magnetic field direction. In order to shed light on the 60% difference in cosmic-ray flux pervading the two clouds, we have studied their turbulent and magnetic properties at a parsec scale. We will discuss estimates along both clouds of the gas volume density and gas phase, the magnetic to thermal pressure ratio, the amplitude of turbulent perturbations in gas velocity and in magnetic-field orientation, the turbulence compressibility, and the steady-state diffusion coefficient along the magnetic field for resonantly self-confined GeV to TeV particles.