Title: Evidence for a Shared Preferred Direction in Fast Radio Burst Sky Distributions

Abstract:

We analyze a collection of 600 fast radio bursts (FRBs) to investigate anisotropies and structural features in their sky distribution. Using axis alignment, radial break, width layering, azimuthal structure, and multipole decomposition, we synthesize results into a unified cosmic likelihood. A significantly clustered alignment between the CMB hemispherical asymmetry axis, the FRB unified axis, and sidereal modulation suggests a shared preferred direction. Our combined analysis yields a total log-likelihood of 24.796, indicating strong evidence against isotropy.

Conclusion:

Our comprehensive suite of tests reveals consistent anisotropic features in FRB sky distributions. From axis clustering to radial structure and multipole power, these findings collectively support the existence of a common preferred direction. While further multi-wavelength data are needed to fully understand the origin, the current evidence strongly challenges purely isotropic models.