Title

MeerKAT UHF-band view of the bridge compressed by the on-going cluster merger

Abstract

Frontier radio telescopes started to discover radio bridges between clusters at the pre-merger phase, yet the number of observed samples remains limited. Here, we propose MeerKAT UHF-band observation on the radio bridges in two ideal targets: Abell 2933 (z=0.09) and SPT-CL J2228-5828 (z=0.73). Enhanced X-ray surface brightness, elevated X-ray temperatures, and significant Sunyaev-Zeldovich effect in the bridge indicate a substantial energy injection from ongoing cluster mergers. The proposed 10 hours of MeerKAT UHF-band observations will reveal the diffuse synchrotron emissions in the bridges between the clusters. Our observations will either discover new radio bridges at the pre-merger phase or provide an upper limit on the efficiency of turbulent re-acceleration in the bridge.