

# Exploring the large scale environment and star formation properties of the Spiderweb proto-cluster at $z = 2.17$ with MeerKAT

## Abstract

This proposal aims at obtaining deep radio continuum data in the field of MRC1138-262, a proto-cluster centred on the Spiderweb galaxy, an extremely bright and massive radio galaxy at  $z = 2.17$ . The unique MeerKAT capabilities in terms of wide field ( $\sim 30$  Mpc at the Spiderweb redshift), good resolution ( $8''$ ) and large dynamic range are a perfect match for the science goals of these observations: 1) the first exploration of the large scale environment of this structure, over the physical scales where proto-clusters evolve and accrete mass at high redshift; and 2) a robust probe over such scales of star formation and nuclear activity, that are supposed to build and shape the cluster galaxy populations observed in the nearby Universe.