Proposal Abstract:

HI 21-cm studies towards radio-loud AGNs allow us to probe the cold gas in the interstellar and circumnuclear medium of the host galaxies and hence understand the fueling and feedback processes. To get a comprehensive view of the evolution of HI gas and radio sources, the HI absorption studies of different radio luminosity AGNs are required. However, at intermediate and high redshift (z > 0.25), the HI absorption studies towards radio luminosity sources due to sensitivity issues of earlier telescopes. FAST due to its unprecedented sensitivity allows us to study low luminosity radio AGNs in the redshift ~ 0.35. In this project, we propose to observe 20 low radio luminosity AGNs in the redshift range of 0.25-0.35. These sources are nearly one order of magnitude lower in their radio luminosities compared to earlier HI absorption studies which allows us to study the effect of different radio luminosity AGNs on HI gas properties in this limited redshift range. Also, it allows us to study the redshift evolution of the HI gas environment of similar low radio luminosity AGNs. We request a total observation time of 20.8 hours for 20 sources in ON-OFF mode.