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Abstract:

AGN-driven outflows is a key element in galaxy evolution. However, quantifying the impact of AGN outflows is hard as it often involves multi-wavelength observations, with only a few of cases have been studied thoroughly. So far, the observations and understanding of outflows are still far from complete. We have carried out a systematically study of AGN outflows through a multi-wavelength approach. In this proposal, we want to use the Five-hundred-meter Aperture Spherical radio Telescope (FAST) to systematically search for the neutral counterparts of outflows in 14 radio quasars that have been detected in optically warm ionised outflows from Sloan Digital Sky Survey (SDSS) data release 16 through HI 21-cm absorption. This will: 1) increase the known number of neutral hydrogen outflows (only 7 broad, FWZI $>1000 \text{ km s}^{-1}$, known neutral hydrogen outflows); 2) let us do a comparison between cold neutral hydrogen outflows and warm ionised outflows and much precisely estimate the impact of outflows; 3) establish a sample for future cold molecular outflows studies. In total, we request 13 hours including the time for overheads.