Proposal Abstract:

As the key ingredient of the galaxy to be affected, the cold ISM is critical to study the energy feedback of active galactic nuclei (AGNs) to their host galaxies. However, H I gas is generally not measured for quasar host galaxies, even at low redshifts, due to the limited sensitivity and efficiency of telescopes prior to FAST. We are pursuing FAST observations of the HI 21cm line emission from the sample of low-redshift optically selected Palomar-Green quasars with complete available information on dust and molecular gas. In this proposal, we ask for observations of 17 sources, to complete the FAST observations of all the PG quasars with dust mass measurements at $z < 0.085$, and to improve the HI line flux and profile measurements/upper limits for objects that have baseline and/or RFI issues in previous FAST observations. These observations will allow us, for the first time, to study the complete cold ISM budget of quasar host galaxies and to quantify HI gas outflows, in order to definitely test the effectiveness of AGN feedback.