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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 propose to observe the H I 21cm line emission for a sample of 21 low-redshift optically selected Palomar-Green quasars, with complete available information on dust and molecular gas. For the first time, we will be able to study the complete cold ISM budget of quasar host galaxies and to quantify H I gas outflows, in order to definitely test the effectiveness of AGN feedback.