

Modeling detection rates of dusty quasars

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Quasars are the most powerful extragalactic compact objects in the universe, they are supermassive black holes located at the centers of distant galaxies accreting surrounding material. Most quasars identified so far are in a relatively dust-free host galaxy, there are however hidden quasars heavily obscured by dust. These type 2 quasars are defined as intrinsically luminous active galactic nuclei with large hydrogen column densities, the strong obscuration is in both optical and soft X-ray bands, which make their detection difficult in these energy bands. The origins of obscuration could be simply due to the dust torus close to the central engine in classical AGN unification model, or due to the dusty circumnuclear region. This project is to model the radio to X-ray multiwavelength continuum spectra of type 2 quasars based on observed samples and simulated spectra, then combine the spectral models with quasar luminosity functions to estimate the detection rates of type 2 quasar in submm by ALMA as well as in X-ray by eROSITA, IXO, and EXIST.