

## Title

### **A MeerKAT Survey for Evolved Star OH Maser Emission**

## Abstract

Forty years since the first pioneering OH maser survey in the southern sky we propose to perform a new, more sensitive survey covering 873 infrared-selected candidates from the AKARI catalogs. This MeerKAT survey will complement surveys recently performed in the northern sky and along the Galactic plane in the southern sky. This MeerKAT survey, by itself and in combination with other data, will yield unbiased Galactic distributions of the evolved star populations, metallicity dependencies, constraints on the AGB-progenitors, mass-loss rate evolution and gas-to dust ratios in the circumstellar envelopes, as well as provide new examples of young pre-planetary nebula candidates. They will be used for studies of Galactic dynamics since the stellar velocities are provided by the maser spectra. The new datasets will also allow to constrain for the first time the possible brightness evolution of the masers on the timescale of decades. The wide bandwidth available with MeerKAT also allows to obtain the simultaneous line ratios of the three ground-state OH masers in evolved stars, and study maser pumping as a function of CSE properties.