

**Proposal Abstract:**

The history of mass loss during the AGB phase of a star is key to understanding the stellar evolution and the gas and dust replenishment of the interstellar medium. Here we propose to observe the 21 cm HI line to determine the atomic content in circumstellar envelopes of a especial AGB star: RS Cnc. RS Cnc is one of the few nearby and low-mass-loss-rate AGB star with a wind displaying both an equatorial disk and bipolar outflows. Its orientation with respect to the line of sight is particularly favorable for a reliable study of its morphokinematics. Using FAST, we expect to obtain an extended HI map ( $30' \times 30'$ ), with detailed structures revealed by a rms of 1.2 mJy per beam. The aims are: (1) to constrain the structure of the whole envelope for the target star, and to derive the mass-loss rate throughout the entire envelope; (2) study the photodissociation effects in the outer parts under the irradiation by interstellar UV photons, and investigate the dissociative influence of shocks; (3) constrain the state of the circumstellar material entering the ambient ISM and study the interaction of the two media.