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High-resolution mapping of massive Hi clouds in the Milky Way’s wind

Abstract

The Milky Way is expelling large amounts of gas from its central regions through a kpc-scale, multiphase galactic wind. To date, more than 200 atomic hydrogen (HI) outflowing clouds have been observed with the GBT and, at least a fraction of them, have been found to carry large fractions of molecular gas, detected in CO with APEX. High-resolution interferometric HI data, matching the spatial and spectral resolution of the CO data, is pivotal to understand the interaction between the different gas phases and pin down their physics. With this project, we propose to probe the bulk mass of outflowing HI by obtaining the first high-resolution HI observations of two massive, filamentary-like clouds, for which complimentary CO data is available. The scientific goal is to resolve their internal structure and kinematics on scales of less than a pc and to investigate their detailed chemical and dynamical state.