



The MeerKAT Absorption Line Survey (MALS) : An Overview

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The MeerKAT Absorption Line Survey (MALS) is a large project to blindly search for HI 21-cm and OH 18-cm absorption lines with the primary goal to better characterize the cold atomic and molecular gas in and around galaxies at $0 \leq z \leq 1.8$. The survey is well underway using the 32K channel mode of the correlator spanning both L (900-1670MHz) and UHF (580- 1015MHz) bands. Due to the excellent sensitivity of the MeerKAT telescope and the large field of view of the telescope, the ~ 500 pointings of the survey will also deliver an extremely competitive HI 21-cm emission line and deep radio continuum (\sim million sources) survey. I will highlight some exciting science results such as (1) the first detection of OH 18cm satellite lines at $z = 0.89$ of the well studied source PKS1830-211, and (2) the first detection of HI 21-cm emission from a low- z DLA, and synergies with various other multi-wavelength surveys. The excellent channel resolution and sensitivity across the wideband allows for fantastic modeling of in-band spectral indices and high resolution faraday synthesis but also poses unprecedented challenges related to the large data volume (1.5 PB raw visibilities) stringent requirements on polarization and direction-dependent calibration and imaging. I will elaborate on these challenges, the data processing plan and the first results from the survey