

A SYNOPTIC VIEW OF THE MAGELLANIC CLOUDS:
VMC, GAIA AND BEYOND

ESO-HQ, GARCHING BEI MÜNCHEN, GERMANY
September 9-13, 2019

Turbulent Properties of the HI in the Magellanic System as Revealed by GASKAP

Pingel Nickolas, Australian National University

The newly commissioned Australian Square Kilometer Array Pathfinder (ASKAP), outfitted with revolutionary phased array feed receiver technology, will provide spectacular wide-field views of the southern sky. A key large-scale project, the Galactic ASKAP (GASKAP) survey, aims to map the distribution of neutral hydrogen (HI) within the plane of the Milky Way and extend to encompass the entire Magellanic system at unprecedented spectral and spatial resolutions. I will present the first results in the characterization of the turbulent environment across the entire Magellanic System as revealed by these new GASKAP data through a combination of statistical diagnostic methods. These methods are designed to provide a comprehensive breakdown of the turbulent energy injection scale and explore the turbulent energy cascade over length scales extending over several orders of magnitude. Such studies will reveal the relative importance of large-scale driving mechanisms (e.g. galaxy-galaxy interactions vs. supernovae) and a comparison between small-scale turbulent environments across a diverse range of star forming and quiescent regions that exist across the SMC, LMC, Stream, and Bridge.