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New Galactic ISM results and progress towards low-frequency spectroscopy

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Abstract. We dicuss new Galactic ISM results and progress towards low-frequency spectroscopy

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1. ISM results with MOST

The Molonglo Observatory Synthesis Telescope (MOST) currently operates as a continuum instrument at 843 MHz with sub-arcminute resolution and excellent brightness sensitivity ($1\,\sigma$ rms, $\sim 1\,\mathrm{mJy\,beam^{-1}}$). An imaging survey of the southern sky (SUMSS; Bock, Large & Sadler 1999) is nearing completion. This includes a second epoch survey of the Galactic plane (Green 2002) from which a catalogue of small diameter sources is in preparation. Correlation of the images and catalogue with 20 GHz observations from the Australia Telescope Compact Array and $8\,\mu$m from the MSX database (following Cohen & Green 2001) will be used to study triggered star formation in the interstellar medium (ISM) by identifying the youngest ultra-compact H II regions and small evolving supernova remnants.

2. Low-frequency spectroscopy with SKAMP

Innovative high-speed digital signal processing techniques will provide a new low-frequency spectral line capability with full polarisation and wide-field imaging, identified as the SKA Molonglo Prototype (SKAMP) project. It will use existing infrastructure and the large collecting area of MOST. Initially, we will target redshifted hydrogen in absorption at $z \simeq 0.7$ through a blind survey over an area of $2000\,\mathrm{deg^2}$. Preliminary testing of the new 96-station, 6000-channel correlator is expected to start in 2007.

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