

Talk at Splinter Meeting

Splinter B

THE MULTIFREQUENCY SNAPSHOT SKY SURVEY - LOFAR'S FIRST SURVEY

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The Multifrequency Snapshot Sky Survey (MSSS) is the first all-sky survey of the LOw Frequency ARray (LOFAR). LOFAR is a dipole interferometer spread out all over Europe with the majority of its stations being located in the Netherlands. MSSS is a LOFAR commissioning project and, being performed with an aperture array based telescope with multi-beaming, the first SKA-like survey. It will provide a catalogue and global skymodel at low frequencies with a unique frequency coverage.

The catalogue consists of two parts: One observed with the Low Band Antennas (LBA) at 30 to 75 MHz, the other with the High Band Antennas (HBA) at 119 to 158 MHz. Both parts cover a wide frequency range and will provide multifrequency data at a resolution of approximately two arcminutes in the first version release. We expect to find 150,000 to 200,000 sources in the catalogue which covers an area of 20,000 square degrees in the northern hemisphere. In combination with the low frequency survey of the Australian Murchison Widefield Array (MWA) it will result in a true all-sky catalogue. MSSS will be published in late 2015/early 2016. The MSSS team is already exploring a preliminary version of the catalogue and finding very promising science results in various fields of astrophysics, such as discovering new supernovae and investigating properties of clusters and galaxies.

In my talk I will focus on the HBA part of the MSSS catalogue. I will briefly introduce the setup and concept of LOFAR and describe in more detail the data and data reduction of MSSS as well as how to access the survey. Furthermore, I will talk about some of the science that is possible with MSSS and thus show its importance in science and as a pathfinder for forthcoming low frequency surveys with radio interferometers.