

Solar physics with LOFAR

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Abstract

LOFAR is a novel radio telescope for the frequency range of 10 - 250 MHz. It consists of antenna fields that are arranged as a dense core near Exloo and remote stations all over the Netherlands, and international stations that span baselines up to 1000 km across Europe. LOFAR data are digitized at the station level and sent to a central correlator in Groningen. This provides LOFAR with great flexibility, and enables it to observe multiple beam directions in the sky simultaneously. LOFAR serves all fields of radio astronomy, from the early universe to solar physics. LOFAR science is organized in Key Science Projects (KSPs). One KSP is "Solar Physics and Space Weather with LOFAR". During LOFAR's commissioning phase and first observational cycles, the Solar KSP has obtained interferometric images of the Sun and recorded several solar radio bursts. First results, including the propagation of an electron beam along magnetic field lines through the upper corona, will be presented.