

Seminar über Microwave Physics and Atmospheric Physics

Referent/in: Casper Farret Jentink, Kapteyn Astronomical Institute, University of Groningen, NL

Titel: Short-baseline Solar observations with a two-element interferometer at 10 GHz

In this talk, the construction of the backend of the Kapteyn Interferometer for Short-baseline Solar observations (KISS), a two-element interferometer, is treated. By using off-the-shelf components, like camping satellite dishes, Low-Noise-Block receivers, and antenna splitters, we were able to correlate the signal and do measurements of the Sun for various baselines. From these measurements, visibilities and baseline lengths were computed to ultimately reconstruct the 1D Fourier Transform of the Solar disk in the 10GHz band. Least-squares fitting to this dataset allowed us to determine the apparent angular size and shape of the Sun in the sky. KISS is currently being used by astronomy and mechanical engineering students to do similar observations. Small upgrades to KISS in the future will allow for other types of measurements, like determining the drift of geostationary satellites or a full 2D reconstruction of the Fourier Transform of the sky brightness distribution around the Sun.

Zeit: Freitag, 05.März 2021, 10:15 Uhr

Ort: Zoom Link: <https://unibe-ch.zoom.us/j/97081325603>
Meeting ID: 970 8132 5603