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Calibration of the LOFAR antennas

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Extensive air showers create short nanosecond-scale pulses in the radio frequencies. These pulses have been measured successfully in the past years at the Low-Frequency Array (LOFAR).
Due to the short duration and emission of the signal in the atmosphere, methods based on flux calibration of known sources as used in radio astronomical observations cannot be applied to establish an absolute calibration. To overcome this, we present three approaches that were used to check and improve the antenna model of LOFAR, and to provide an absolute calibration for air shower measurements. In future work these results can be used as an absolute scale for measurements of astronomical transients with LOFAR.

Collaboration

– not specified –

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