

Metsähovi Radio Observatory Triple-Band Receiver project

Abstract: As a part of a major infrastructure upgrade, Aalto University Metsähovi Radio Observatory will renew the receivers and data acquisition systems of its 14-metre radio telescope. A key part of this upgrade is a new ultra-wide-bandwidth triple-band receiver that is able to simultaneously observe at 18-26, 34-50 and 80-116 GHz. The dual-beam, gain-stabilized receiver will have more than an order of magnitude better sensitivity in single-dish continuum observations compared to the current receivers and allow wide-band spectra to be measured simultaneously. Furthermore, the new receiver will allow Metsähovi to carry out very long baseline interferometry (VLBI) observations using frequency-phase-transfer technique to compensate for the phase errors due to tropospheric delay fluctuations and significantly increase the sensitivity of VLBI at short mm-wavelengths. I will discuss the status of the receiver upgrade, the related backend project and the commissioning plans.

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