

Status and upcoming Evolution of NOEMA

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NOEMA, the Northern Extended Millimeter Array, is operating with its Phase I configuration since 2018. NOEMA is a transformational upgrade of the former IRAM PdBI interferometer in the French alps. The observatory covers a frequency range from 70 to 365 GHz with angular resolutions down to 0.1 arcseconds. The instrumental key elements are a) receivers with 4 frequency bands employing a wideband 2SB-SIS mixer technology in dual polarization while generating a total of 32 GHz IF bandwidth as well as b) an advanced and highly flexible correlator with simultaneous continuum and high spectral resolution capabilities. The correlator includes means to phase all antennas for VLBI observations.

The fundamental technological choices which have been made for the NOEMA project will be described and key performance figures as well as their impact on science will be discussed.

Once Phase II will be achieved in 2021, the interferometer will see upgrades for dual band operation in the following years. The ongoing technological developments for yet further upgrades will briefly be outlined.



Figure 1. NOEMA Phase I with 10 Antennas.