

PHYSIKALISCHES KOLLOQUIUM

SOMMERSEMESTER 2024

Montag, 24.06.2024, 12 Uhr c.t.

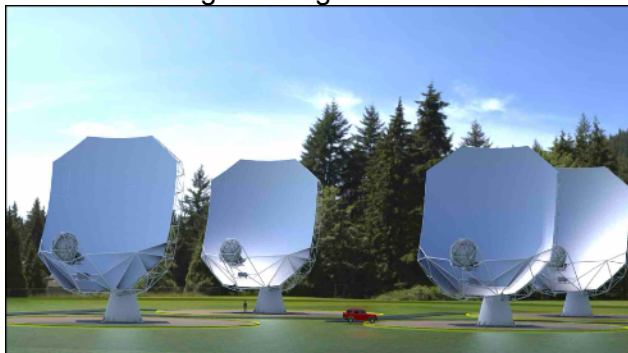
LEVERAGE - CONCEPT FOR A LONG-BASELINE EXTENSION IN NEXT-GENERATION VLBI EXPERIMENTS AND RAPID-RESPONSE ARRAY

Prof Matthias Kadler, University of Würzburg

The next decades of radio astronomy will be dominated by large facilities of superior sensitivity. Between 1GHz and 15GHz, strong synergies can be developed between the next-generation Very Large Array (ngVLA) and the Square Kilometre Array (SKA), specifically the SKA-mid. Towards higher frequencies, the ngVLA will be able to co-observe with other frontline facilities including the EVN (at 1-43 GHz), and the GMVA (at 43-86 GHz). In this talk, I will discuss the possibility of enhancing these synergies with an array of radio antennas in Germany to be operated as a stand-alone facility, as well as a complement to the ngVLA, SKA-mid, EVN, and GMVA in VLBI and studies of transients. LEVERAGE is a concept for an array of two to four radio-antenna stations operating in the mid-to-high frequency range (up to 120GHz) with baselines between 500km and 1000km, which will significantly enhance the science capabilities of both the SKA and ngVLA in terms of submilliarcsecond-scale image reconstruction and flexibility in reacting to short transient events. Moreover, the LEVERAGE concept offers high efficiency as a stand-alone instrument and can be optimized to localize and follow-up radio transients with a faster reaction time than the larger next-generation facilities.

The facility may support special modes that are difficult to realize on the full large next-generation facilities or are going beyond their scope such as long uninterrupted integrations, high-cadence observations, long-term monitoring or broader simultaneous frequency coverage.

Credit: mtex antenna technologies



Die Einführung erfolgt durch Dominik Bomans

Die Fakultät lädt alle Interessierten herzlich ein. Die Veranstaltung findet im Hörsaal HNB statt.

