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.