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GRAND - the Giant Radio Array for Neutrino Detection

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The Giant Radio Array for Neutrino Detection (GRAND) aims at detecting ultra-high-energy extraterrestrial neutrinos via the extensive air showers induced by the decay of tau leptons created in the interaction of neutrinos under the Earth's surface. Consisting of an array of $\sim 10^5$ radio antennas deployed over $\sim 2 \cdot 10^5 \text{ km}^2$, GRAND plans to reach, for the first time, a sensitivity of $\sim 10^{-10} \text{ GeV cm}^{-2} \text{ s}^{-1} \text{ sr}^{-1}$ above $5 \cdot 10^{17} \text{ eV}$ and a sub-degree angular resolution, beyond the reach of other planned detectors. In this talk, we will show preliminary designs and simulation results, plans for the ongoing, staged approach to construction, and the rich research program made possible by the proposed sensitivity and angular resolution.

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