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Radio detection of ultra-high-energy cosmic rays and neutrinos

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Detecting ultra-high-energy cosmic particles is critical to understanding the origin and properties of sources that can create such phenomenon. However, at the highest energies the particle flux is very low, and so a detection method that can use large areas as a target medium is highly valuable. Moreover, the features of the primary particle must be reconstructable using the data collected. The radio detection technique fills these criteria and is well established in the context of detecting cosmic rays. Programs at LOFAR and Auger have demonstrated that energy, arrival direction, and point of maximum development of the corresponding air shower can all be reconstructed well. This technique is also being used to try to detect the highest energy neutrinos, making use of Antarctic and Greenlandic ice as a target medium. In this talk, the radio detection technique and state of the field will be presented.

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Session Classification: Astrophysical Neutrinos