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Simulation Study of the Fraction of Askaryan Radio Emission from Cosmic-Ray Air Showers at the South Pole. EK NARAYAN PAUDEL, University of Delaware, FRANK SCHROEDER, Bartol Research Institute, University of Delaware, ICECUBE COLLABORATION — Cosmic rays are highly energetic charged particles entering the Earths atmosphere from outer space. Above $\sim 10^{14}$ eV their very low flux can only be studied indirectly using the extensive air showers they generate when interacting high in the atmosphere. Radio detection of air showers has developed as an effective technique to study these ultra-high-energy cosmic rays. A major component of the radio emission from such air showers is the geomagnetic emission produced by deflection of charged particles within the air shower in the Earths magnetic field. This geomagnetic emission is linearly polarized. Radially polarized Askaryan emission is a minor component which is produced due to the varying negative charge excess at the shower front. The resulting polarization of radio emission is the superposition of these two components. In this talk, we are presenting a CORSIKA/CoREAS simulation study of the polarization of the radio emission and the relative fraction of the Askaryan component in cosmic-ray air showers at the South Pole.

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