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## Detection of Radio Emission in Atmospheric Air Showers with LOPES<sup>^</sup>STAR

Ultra high energy cosmic rays (UHECRs) generate in the atmosphere secondary particles, in particular a high number of  $e^+e^-$  pairs. The geosynchrotron theory predicts pulsed, coherent radio emission from the deflection of these light charged particles in the earth's magnetic field. Within the framework of LOPES (Lofar PrototypE Station), 30 short dipole antennas (LOPES30) are triggered by the air-shower experiment KASCADEGrande for UHECR with an energy above  $\approx 5 \cdot 10^{16}$  eV. An enhancement of that technique is given by LOPES STAR (Self - Triggered Array of Radiodetectors) with the challenge to provide an independent, self triggered radio detector for UHECRs. Radio data is taken in a frequency range from 40 - 80 MHz on the one hand in self - trigger mode and on the other hand by using an external trigger from KASCADE-Grande. The high frequency data is digitised for a given time in the 2. Nyquist Zone and needed to be reconstructed before the analysis in the time domain is performed. The methods and first results from LOPES STAR are described.

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