

Radio emission from energetic particle cascades

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The radio-detection of high-energy particles has recently undergone a revival, with current experiments using the Earth's atmosphere, Antarctic ice, and even the lunar regolith as a detection medium for cosmic rays and neutrinos. In this talk, I will briefly review the range of experiments using the radio technique to search for and study these particles, and outline the phenomenology of the Askaryan and geomagnetic effects that produces the emission. I will then delve a little deeper into the theory of radio-emission, and try to provide some insight into how the calculation methods implemented in programs such as CoREAS and ZHAireS have enabled them to successfully model the emission.

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