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Properties of the Lunar Detection Mode for ZeV Scale Particles with LOFAR

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The steep decrease of the flux of ultra-high energy cosmic rays (UHECR) provides a challenge to answer the long standing question about their origin and nature. A significant increase in detector volume may be achieved by employing Earth's moon as detector that is read out using exisiting Earth-bound radio telescopes by searching for the radio pulses emitted by the particle shower in the lunar rock. In this contribution we will report on the properties of a corresponding detection mode currently under development for the LOFAR Radio telescope.

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