Parametrization of the Relative Amplitude of Geomagnetic and Askaryan Radio Emission from Cosmic-Ray Air Showers using CORSIKA/CoREAS Simulations
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Executive summary:

- This contribution is about simulation study of radio emission from cosmic ray air showers at the South Pole location.
- The relative contribution of two radio emission mechanisms: Geomagnetic and Askaryan emission can provide a handle on determining mass-sensitive air shower parameter, depth of shower maximum(X_{max}).
- We have used simulated radio emission from cosmic ray air showers produced by proton and iron primary at the South Pole location using CoREAS and studied the correlation of the relative contribution of two radio emission mechanisms with distance to shower maximum (dX_{max}).
- Relative amplitude of two emission mechanisms is well correlated with dX_{max} but the spread is too large for precise determination of shower maximum.