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## Signal Model and Energy Reconstruction for the Radio Detection of Inclined Air Showers in the 50-200 MHz Frequency Band

The radio emission of cosmic-ray air-showers changes significantly depending on parameters like frequency, magnetic field configuration and observing altitude. We use CoREAS simulations to adapt an existing signal model for the radio emission of inclined showers in the 30 – 80 MHz frequency band to the wide 50–200 MHz band. The model uses a parametrisation of the charge excess fraction to isolate the geomagnetic emission component. We reconstruct the air-shower radiation energy by fitting a lateral distribution function, provided by the model, to the geomagnetic energy fluence distribution of the shower.

We show the intrinsic performance of the model for the locations of the Pierre Auger Observatory and GRAND-Proto300. For GRANDProto300, we additionally test the reconstruction with simulations of a realistic antenna grid and find an intrinsic energy resolution of  $< 5\%$  with negligible bias.

### Collaboration(s)

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