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## The Offline software package for analysis on radio emissions from air showers at the Pierre Auger Observatory

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The measurement of radio emission from air showers has proven to be an invaluable source of physical information for cosmic ray physics. Apart from providing more insight into the shower mechanisms, it can be used at the Pierre Auger Observatory to increase the accuracy of the detection of cosmic rays of  $10^{18}$  eV and above. For this purpose the Pierre Auger Collaboration is deploying the Auger Engineering Radio Array (AERA) which consists of 165 antennas covering an area of 20 km<sup>2</sup>. To reconstruct the events and to study and compare the theoretical emission models with the measurements, a detailed and precise understanding of the detector is necessary. For this reason we have built radio-functionality into the existing Offline analysis and reconstruction framework of the Pierre Auger Observatory. This presentation will discuss the philosophy and purpose of the data analysis package for AERA. Also, its functionality will be outlined, such as the reconstruction of shower parameters and the detector behavior.

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