Abstract Submitted
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Cosmic Rays for High School Students[1] MARJORIE BARDEEN, ROBERT PETERSON, Fermilab, THOMAS JORDAN, University of Florida — We discuss a suite of QuarkNet activities that provide data from the Fermilab cosmic ray DAQ for three learning modes: survey, exploration and investigation. Teachers and students assemble our classroom detectors. They study data locally and/or upload data to a server for others; students without detectors have access to the data. In survey mode, students may sum columns, draw plots comparing columns, calculate descriptive statistics. They can describe patterns and may indicate outliers. Exploration mode provides visual or tabular data for doing measurements that couple values in different columns for a newly derived measurement. Students still draw plots, calculate statistics and describe patterns. Students may attend a master class performing these tasks in a group setting. Students in investigation mode use data and provided analysis and investigation tools to perform research-type investigations. Students can investigate relationships between measurements extant in the data as well as relationships between the presented data and external data sets. They also may perform the same tasks that they do in other modes e.g., draw plots. Students use a project map associated with a browser-based e-Lab to guide their investigations.

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