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Double beta decay analysis with CUORE continuous data and CUORE data monitoring tools

The CUORE (Cryogenic Underground Observatory for Rare Events) experiment will search for neutrinoless double beta decay of Te-130. CUORE large-mass bolometer array will consist of 988 tellurium oxide bolometer modules and a total of 206 kg of Te-130 in one single cryostat at 10 mK. With the relatively low bandwidth of the bolometer signals, we sample at 125 to 1000 S/s. In addition to the triggered data, we can afford to store continuously sampled data. In this poster, we present the novel physics analysis algorithms implemented with the continuously sampled data stream, and discuss their advantages and challenges. Another crucial aspect of future CUORE data taking is automated monitoring of the performance of 988 modules in real time. We have developed a set of browser-based data monitoring tools for this purpose, which will be presented here as well.

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