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The Mu3e Data Acquisition System

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The Mu3e Experiment at PSI is designed to search for the lepton-flavour violating decay of a positive muon to two positrons and an electron with an ultimate sensitivity of one in 10^{16} muon decays. The detector is based on ultra-thin high-voltage monolithic active pixel sensors combined with scintillating fibres and tiles for precise timing measurement. Already in the first phase of data taking with up to 10^8 muon stops/s, the detector will produce about 60 Gbit/s of raw data. The poster discusses the Mu3e data acquisition system, which transports these data out of the detector, time-sorts them and searches for interesting signatures by performing a full track and vertex reconstruction using graphics processing units (GPUs).

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