The ATLAS Trigger System

The ATLAS experiment in the LHC Run 3 is recording up to 3 kHz of fully-built physics collision events out of an LHC bunch crossing rate of up to 40 MHz, with additional rate dedicated to partial readout. A two-level trigger system selects events of interest to to cover a wide variety of physics while rejecting a high rate of background events.

The selection of events targets both generic physics signatures, such as high pT leptons, jets, missing energy, as well as more specific signatures targeting specific physics, such as long lived particles, or di-Higgs events.

We will present an overview of the ATLAS trigger system in Run 3, including improvements to the first level trigger hardware and high level trigger software compared to Run 2, and of the trigger performance in 2022.

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