ATLAS trigger operations: Monitoring with "Xmon" rate prediction system ANDREW AUKERMAN, TAE MIN HONG, University of Pittsburgh — We present the operations and online monitoring with the "Xmon" rate prediction system for the trigger system at the ATLAS Experiment. A two-level trigger system reduces the LHC's bunch-crossing rate, 40 MHz at design capacity, to an average recording rate of about 1 kHz, while maintaining a high efficiency of selecting events of interest. The Xmon system uses the luminosity value to predict trigger rates that are, in turn, compared with incoming rates. The predictions rely on past runs to parameterize the luminosity dependency of the event rate for a trigger algorithm. Some examples are given to illustrate the performance of the tool during recent operations.

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