ATLAS trigger operations: Upgrades to "Xmon" rate prediction system AVA MYERS, ANDREW AUKERMAN, TAE MIN HONG, University of Pittsburgh, ATLAS COLLABORATION — We present "Xmon," a tool to monitor trigger rates in the Control Room of the ATLAS Experiment. We discuss Xmon's recent (1) updates, (2) upgrades, and (3) operations. (1) Xmon was updated to modify the tool written for the three-level trigger architecture in Run-1 (2009-2012) to adapt to the new two-level system for Run-2 (2015-current). The tool takes as input the beam luminosity to make a rate prediction, which is compared with incoming rates to detect anomalies that occur both globally throughout a run and locally within a run. Global offsets are more commonly caught by the predictions based upon past runs, where offline processing allows for function adjustments and fit quality through outlier rejection. (2) Xmon was upgraded to detect local offsets using on-the-fly predictions, which uses a sliding window of in-run rates to make predictions. (3) Xmon operations examples are given. Future work involves further automation of the steps to provide the predictive functions and for alerting shifters.

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