

The ATLAS Online Luminosity Software

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The Online Luminosity software of the ATLAS experiment has been upgraded in the last two years to improve scalability, robustness, and redundancy and to increase automation keeping Run-3 requirements in mind.

The software package is responsible for computing the instantaneous and integrated luminosity for particle collisions at the ATLAS interaction point at the Large Hadron Collider (LHC). The software processes and calibrates the information coming from the luminometer detectors, archives the ATLAS luminosity information for physics data analysis, handles Van Der Meer scans, and feeds back luminosity and beam-related information to the LHC control system.

Enhancements to the software will both enable its use in 2018 in emittance scans (publishing to LHC per bunch information

and errors, and handling the scan protocol in an automatic way) and, with its multithreading and improved robustness,

benefit physics data taking as well.

The online luminosity software package and the operational experience during the LHC Run-2 will be described in this article.

Primary authors: GARELLI, Nicoletta (SLAC National Accelerator Laboratory (US)); KASTANAS, Alex (KTH Royal Institute of Technology (SE)); SALNIKOV, Andy (SLAC National Accelerator Laboratory (US))

Presenter: KASTANAS, Alex (KTH Royal Institute of Technology (SE))

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