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The phase-1 upgrade of the ATLAS level-1 calorimeter trigger

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The ATLAS level-1 calorimeter trigger (L1Calo) is a hardware-based system that identifies events containing calorimeter-based physics objects, including electrons, photons, taus, jets, and missing transverse energy. In preparation for Run 3, when the LHC is expected to run at higher energy and instantaneous luminosity, L1Calo is currently implementing a significant programme of planned upgrades. The existing hardware will be replaced by a new system of feature extractor (FEX) modules, which will process finer-granularity information from the calorimeters and execute more sophisticated algorithms to identify physics objects; these upgrades will permit better performance in a challenging high-luminosity and high-pileup environment. This talk will introduce the features of the upgraded L1Calo system and the plans for production, installation, and commissioning. In addition, the expected performance of L1Calo in Run 3 will be discussed.

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