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The ATLAS detector evolution towards the High Luminosity era

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After 9 years of successful operation in proton-proton collisions reaching up to $\sqrt{s}$ = 13 TeV, the ATLAS detector started in 2018 the preparations for an ambitious physics project, aiming the exploration of very rare processes and extreme phase spaces, an endeavor that will require a substantial increase in the integrated luminosity. To accomplish this purpose, a comprehensive upgrade of the detector and associated systems was devised and planned to be carried out in two phases. The Phase-I upgrade foresees new features for the muon detector, for the EM calorimeter trigger system and for all trigger and data acquisition chain. For the Phase-II upgrade, ATLAS will fully replace its inner tracker, install a new timing detector and the calorimeters and muon systems will operate on a free-running readout scheme. This presentation will summarize the expected performance of the aforementioned projects, as well as the new insights gained during the construction phase.

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