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Upgrade and physics plans for ATLAS in LHC Run4 (recorded)

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The ATLAS experiment has been in successful operation at the Large Hadron Collider (LHC) since 2009, collecting data from proton-proton collisions of up to $\sqrt{s}$ = 13 TeV. It is now gearing up to collect its majority of data at the high luminosity LHC. For this, upgrades are underway to face the challenge of a significant increase in number of interactions per bunch-crossing (pile-up), large detector occupancies and unprecedented collision rates. However, the upgrades will not only allow us to probe the Standard Model with greater precision and comb through finer statistics for new phenomena. It will also be an opportunity to enhance the physics potential of the experiment beyond just increasing the available data sets.
The upgrade will include a replacement of the inner tracker and a new timing detector as well as improvements in trigger acquisition and strategy. This talk will summarise the status and expected performance of these projects followed by how these upgrades are envisaged to boost the physics potential of the experiment for the HL-LHC.

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Session Classification: Unexplored ideas for ALICE, ATLAS, CMS and LHCb