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Performance of the ATLAS Tau Trigger in Run 2

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Tau leptons are used in a range of important ATLAS physics analyses, including the measurement of the SM Higgs boson coupling to fermions and searches for Higgs boson partners or heavy resonances decaying into pairs of tau leptons. Events for analyses are provided by a number of single and di-tau triggers, as well as triggers requiring tau lepton in combination with other objects.

As the luminosity of proton-proton collisions at the LHC is going to exceed the design of $10^{34} \text{cm}^{-2} \text{s}^{-1}$ in Run 2, the tau trigger strategies have to become more sophisticated than in Run 1. Topological selections at the first trigger level, fast tracking algorithms and improved identification requirements are the main developments to allow a large program of physics analyses with tau leptons.

The performance of the ATLAS tau trigger during the 2015 and early 2016 data taking will be presented, together with the plans for further developments envisaged during the Run 2

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