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Inclusive four lepton measurement with the ATLAS experiment at 13 TeV

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The Standard Model (SM) is a successful theory capable of describing observations across many physics processes. Nevertheless, the SM can not be the complete picture as it lacks to explain phenomena such as the matter-antimatter asymmetry, the behaviour of the cosmic microwave background, and others. Therefore, a presence of new physics is needed.

Various SM measurements, and their combinations, can be used to put constraints on models describing phenomena beyond the SM. This approach is useful in particular in the cases where new physics is expressed by many parameters, such as the effective field theory (EFT). An example of the measurement, which allows to probe phenomena within the SM and beyond, is an analysis of events with at least four leptons produced in proton-proton interactions at the LHC. I will present the latest ATLAS four lepton measurement at $\sqrt{s} = 13$ TeV and show, how the results can be used to systematically look for new physics within the SMEFT framework.

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