Contribution ID: **24** Type: **Parallel talk**

Measurement of high-mass di-tau production using $\sqrt{s}$ = 13 TeV proton-proton collision data collected with the ATLAS detector

Monday 7 April 2025 16:00 (15 minutes)

This analysis involves measuring the fiducial differential cross sections of high-mass di-lepton production with two hadronically decaying taus, using the full ATLAS Run-2 data.

One of the main motivations for this analysis is that it provides good sensitivity to a compelling BSM theory (LeptoQuark) that explains the anomalous b-hadron decay fractions observed at both BaBar and LHCb.

In this analysis, the visible di-tau invariant mass distribution is measured and unfolded to the particle level and is compared with the theory predictions from Sherpa 2.2.11 and Powheg Box+Pythia 8. The CONTUR package is used to evaluate the sensitivity of this measurement to the inclusive SMEFT model and other BSM theories.

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Session Classification: Collider Physics - Electroweak (EW) and Higgs

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