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Effective Field Theory Interpretation of Same-Sign WW Vector Boson Scattering with the ATLAS Experiment

While the Standard Model (SM) of particle physics has been successful in describing known fundamental particles and interactions, it is incomplete. The amount of charge-parity (CP) violation predicted within the SM is insufficient to explain the observed matter-antimatter asymmetry in the Universe. Additionally, possible deviations in the self-interactions of electroweak bosons motivate the exploration of theoretical frameworks that extend the SM. Effective Field Theories (EFTs) provide model-independent approaches to capture effects of new physics by adding higher-dimensional operators to the SM Lagrangian. This talk will explore using data collected at Run 3 of the Large Hadron Collider at a centre-of-mass energy of 13.6 TeV to explore observables sensitive to effects of CP-odd EFT operators and study potential deviations from SM predictions using same-sign WW vector boson scattering.

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