

Abstract Submitted
for the APR21 Meeting of
The American Physical Society

Differential Measurement of ZZjj Production with the Full ATLAS Run-2 Dataset PRAJITA BHATTARAI, Brandeis University — The electroweak production of two Z bosons in association with two jets (ZZjj) was experimentally observed in ATLAS with the complete LHC Run 2 dataset in 2019. Electroweak production of ZZjj is sensitive to couplings between the Higgs boson and vector bosons (HVV) as well as triple and quartic gauge couplings. Within the Standard Model, interference between diagrams containing the HVV, triple, and quartic gauge couplings makes electroweak ZZjj production rare. Measurements in this topology are therefore highly-sensitive to possible contributions from new physics. This talk will motivate the differential ZZjj analysis within the fully leptonic final state, discuss some relevant analysis techniques such as unfolding and background estimation, and outline the prospects for probing beyond the Standard Model theories.

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Date submitted: 11 Jan 2021

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