



Contribution ID: 121

Type: **Poster presentation**

Exploring Anomalous Quartic Gauge Couplings in the ZZjj production channel at the HL-LHC and Beyond

Tuesday 3 September 2024 19:30 (20 minutes)

A detailed study on the sensitivity of the production channel of two Z bosons in association with two jets (ZZjj) at the High-Luminosity Large Hadron Collider (HL-LHC) and future colliders, such as the Future Circular Collider (FCC), is presented, focusing on the Quartic Gauge Couplings (QGCs) within the framework of an Effective Field Theory (EFT) with dimension-eight operators. Using Monte Carlo simulations at truth-level and kinematic criteria that mimic the ATLAS detector geometry, constraints on anomalous QGC parameters are evaluated, and the impact of increased luminosity on the sensitivity of these couplings is examined. The analysis demonstrates that higher statistics significantly enhance the ability to set tighter limits on the QGC parameters. This work enables future studies, highlighting the potential of HL-LHC to explore new physics through the precise measurement of quartic gauge interactions.

Internet talk

Yes

Is this an abstract from experimental collaboration?

No

Name of experiment and experimental site

N/A

Is the speaker for that presentation defined?

No

Details

N/A

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