

A sensitivity study of VBF-V to dimension-6 EFT operators at the LHC

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Vector Boson Fusion (VBF) is a purely electroweak process and a fundamental tool to test the electroweak sector of the standard model (SM). Leptonic decay modes of the vector bosons are used to measure SM processes and search for physics beyond the SM, since they feature a clean signature and hence, a lower level of background.

We present a parton-level study in two VBF channels at the Large Hadron Collider that establishes the VBF sensitivity to a set of dimension-six operators in the Standard Model Effective Field Theory (SMEFT). Two different final state are studied, namely VBF-Z and the VBF-W.

The template analysis performed to define the optimal observables for each operator and process considered is shown.

Constraints are put on dimension-6 operators and compared to current limits extracted in VBS and diboson channels.

An outlook on the possible combination of different final states toward a global SMEFT fit is also given.

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