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Constraining SMEFT operators with associated $h\gamma$ production in Weak Boson Fusion

As the search for physics beyond the Standard Model (BSM) continues, the Standard Model Effective Field Theory (SMEFT) has become a useful tool to constrain deviations from the SM in a model-independent way. In this talk we will consider the associated production of a Higgs boson and a photon in weak boson fusion (WBF), with the Higgs boson decaying to a pair of bottom quarks. I will present a cut-based analysis and multivariate techniques to determine the sensitivity of this process to the bottom-Yukawa coupling in the SM and to possible CP-violation mediated by dimension-6 operators in the SMEFT.

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