

Revisiting the Effective W Approximation at muon colliders

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Starting from collider energies of a few TeV, electroweak vector boson fusion/scattering becomes the dominant production mode at lepton colliders for Standard Model and new physics processes that are relevant to studying the EW sector. We show that in this regime a muon collider would effectively act as a “high-luminosity weak boson collider,” offering a wide range of opportunities to precisely measure electroweak and Higgs couplings as well as discover new particles. We also present recent Monte Carlo developments in the context of the MadGraph5_aMC@NLO platform that allow for the precise exploration of arbitrary Standard Model and new physics processes.

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