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Vector Boson Scattering to alpha_W^2 alpha_s^{n+2} log^n(s/t)

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Vector boson scattering (VBS) represents a key test of the standard model. In order to reliably extract the electroweak contribution to this process, which probes the triple and quartic gauge couplings, a good understanding of the QCD background is necessary. We present a study of the QCD contribution to same-sign W production in association with at least two jets at the LHC within the High Energy Jets (HEJ) framework, which enables the resummation of leading logarithms in s/t to all orders. These high energy logarithms are especially important when the two leading jets have a large invariant mass, which is typical of the VBS cuts used by experiments to enhance the signal over background ratio. Therefore HEJ provides a way to significantly improve the accuracy of the predictions in this critical region.

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