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An evaluation of the QCD uncertainties of $Z/\gamma^* \to \tau\tau$ background for the $H \to WW$ measurement LI ZHOU, ROBERT KEHOE, HULIN WANG, Southern Methodist University — The instantaneous luminosity of the Larger Hadron Collider will increase during Run 2 to about $1 \times 10^{34} cm^{-2} s^{-1}$, and the center-of-mass energy will increase to about 14 TeV. This will increase the number of Higgs bosons for more precise physics study. This will also require more precise theoretical predictions. We evaluate the QCD uncertainties on the $Z/\gamma^* \to \tau\tau$ background extrapolated from control region to signal region. This is important for the study of $H \to WW$. Results are presented for the gluon-gluon-fusion event selections and the vector-boson-fusion event selections, respectively.

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