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Improvements to diboson production through higher order corrections

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With the Run 2 and the upcoming high-luminosity phase at the LHC, improvements of theoretical predictions are crucial. In this talk I'll be discussing the impact of EW corrections and approximations such as EW Sudakov logarithms using a generic and fully automated framework implemented in SHERPA. Another piece to consider in order to improve predictions is the loop induced through gluon fusion channel at NLO. The virtual part of this process is currently one of the most complicated matrix element known and its complete expression is not yet available, indeed only recently its top mass dependence has been computed for the on-shell case. For off-shell bosons a good approximation of it can be achieved through reweighing the virtual amplitude or using the large top mass approximation. In this talk I'll be showing the state-of-the-art of this process and how it has been implemented into SHERPA

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