

Nonperturbative fitting in resummation calculation

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The resummation calculation (ResBos) is a widely used tool for the simulation of single vector boson production at colliders. As the improvement over the ResBos code by increasing the accuracy from NNLL+NLO to $N^3\text{LL}+\text{NNLO}$, the nonperturbative function needs to be updated. We propose a new non-perturbative function (IFY) that includes information about the rapidity of the system. The IFY functional form was fitted to data from fixed target experiments, the Tevatron, and the LHC. We find that the non-perturbative function has mild rapidity dependence based on the results of the fit.

Primary authors: Dr ISAACSON, Josh (Fermi National Accelerator Laboratory); FU, Yao (University of Science and Technology of China); Prof. YUAN, C.-P. (Michigan State University)

Presenter: FU, Yao (University of Science and Technology of China)

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