Contribution ID: **219** Type: **Presentation**

Soft Gluon Resummation at NNLL Accuracy for Associated $t\bar{t}H$ Production at the LHC

Tuesday, 1 August 2017 13:30 (30 minutes)

The $t\bar{t}H$ production process probes the top-Higgs Yukawa coupling directly which is especially sensitive to the underlying physics. The measurement of the $pp \to t\bar{t}H$ cross section is among the highest priorities of the current LHC physics program and improvement of the theoretical accuracy is of the central importance. In this talk the latest results for soft gluon resummation at fixed invariant mass for $pp \to t\bar{t}H$ will be presented. The resummation is extended to next-to-next-to-leading logarithmic accuracy. The invariant mass resummation results will be presented in the form of the inclusive cross section and the invariant mass distribution, including scale uncertainty.

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Session Classification: Higgs and EWSB

Track Classification: Higgs and EWSB