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NLO QCD and EW corrections to off-shell tZj production at the LHC

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The production of a single top quark in association with a Z boson (tZj production) at the LHC is a relevant probe of the electroweak sector of the Standard Model as well as a window to possible new-physics effects. The growing experimental interest in performing differential measurements for this process demands an improved theoretical modelling in realistic fiducial regions. In this article we present an NLO-accurate tZj calculation that includes complete off-shell effects and spin correlations, combining QCD and electroweak radiative corrections to the LO signal. Integrated and differential cross-sections are shown for a fiducial setup characterized by three charged leptons, two jets, and missing energy.

Summary

Authors: DENNER, Ansgar (Universitaet Wuerzburg); SCHWAN, Christopher (Universität Würzburg); PELLICCIOLI, Giovanni (Würzburg Universität)

Presenter: SCHWAN, Christopher (Universität Würzburg)

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