

# DIS2023: XXX International Workshop on Deep-Inelastic Scattering and Related Subjects



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Type: **Parallel talk**

## Dependence of the top-quark mass measured in top-quark pair production on the parton distribution functions at the LHC and future colliders

*Thursday 30 March 2023 11:30 (20 minutes)*

The dependence of the top-quark mass measurement in top-quark production on the parton distribution functions (PDF) is explored through differential mass distributions in  $t\bar{t}$  and  $t\bar{t}j$  production at the LHC and a future 100 TeV proton-proton collider. The top-quark mass uncertainty is obtained from chi-squared fits to invariant mass distributions from simulations assuming different top pole masses around the nominal value of 172.5 GeV. The PDF uncertainties of the differential distributions are used in the chi-square evaluation and reduced through a fit to differential distributions in  $t\bar{t}$  and  $t\bar{t}j$  production. I will present the resulting reduced top pole mass uncertainties.

### Submitted on behalf of a Collaboration?

No

### Participate in poster competition?

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