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DIPARTIMENTO
DI FISICA E GEOLOGIA



Among the rarest:
theoretical insights
into four top-quark production
at the LHC

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The production of four top quarks is one of the rarest processes in the Standard Model, and it was finally observed in 2023 at the LHC. Studying this process offers valuable insights into the top-Higgs interaction and may reveal new physics. Thus, comparing theoretical predictions with current and future measurements is a crucial test for the Standard Model.

In this talk, I will provide an overview of $pp \rightarrow t\bar{t}t\bar{t}$ and introduce the resummation framework used to achieve the most accurate predictions to date for both the total cross section and invariant mass distribution. I will then present these results, highlighting their significance and the improvements made.