

Weekly Report

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Jan 4.2021

Top mass measurement

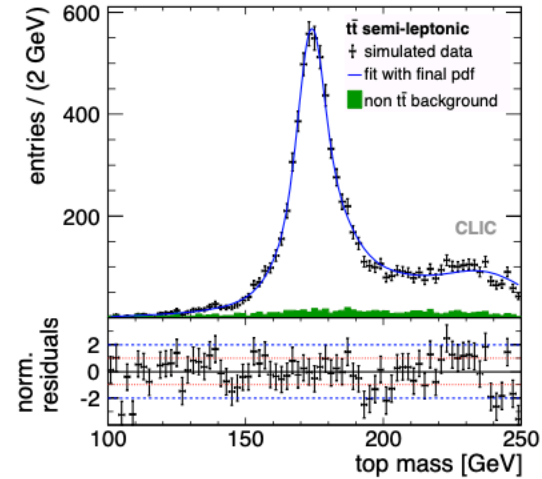
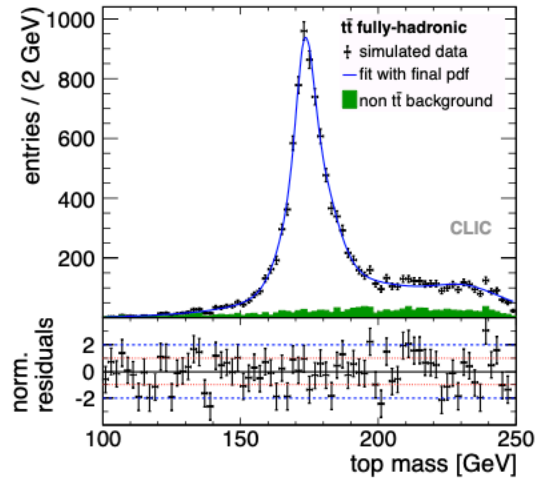
- ❖ Reference : Top quark mass measurements at and above threshold at CLIC DOI: [10.1140/epjc/s10052-013-2530-7](https://doi.org/10.1140/epjc/s10052-013-2530-7)

- ❖ The paper answered questions :
 - ◇ How to measure top's property at lepton collider ?
 - ◇ 1) Direct reconstructed invariant mass
 - ◇ 2) Threshold scan
 - ◇ What does the top threshold cross section depend on?
 - ◇ Top mass
 - ◇ Top width
 - ◇ top-Higgs coupling
 - ◇ Alpha-QCD
 - ◇ What precision can be achieved?
 - ◇ 1) m_t stat. error : 80MeV
 - ◇ 2) m_t stat. error : 34MeV, α_s stat. error : 0.0009

Invariant mass reconstruction

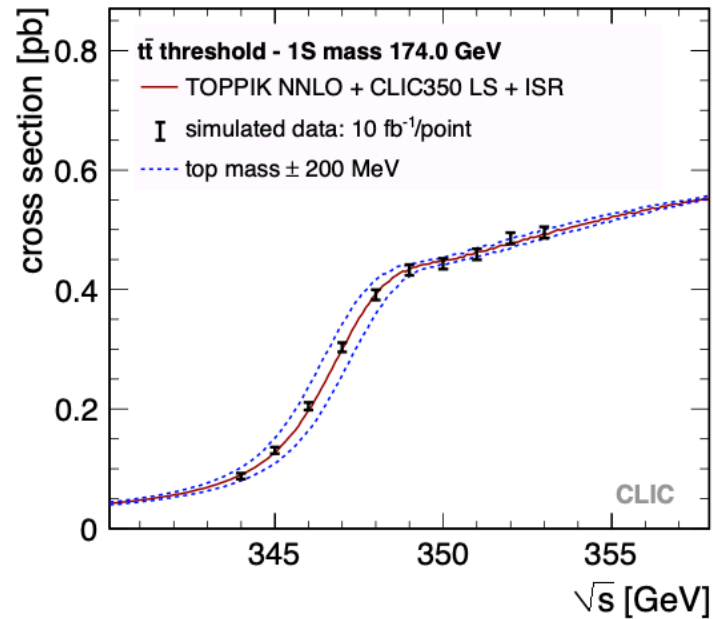
❖ fully-hadronic and semi-leptonic channels

◇ $T\bar{t}$ -> 6jets/4jets+lν



Threshold scan

❖ 2-D(m_t , α_t) templates fits



◇ Main additional corrections : ISR and LS

Summary

- ❖ Next step: Understand the first approach
 - ◇ Background
 - ◇ Final state reconstruction
 - ◇ Fit
 - ◇