Data vs MC in 2018

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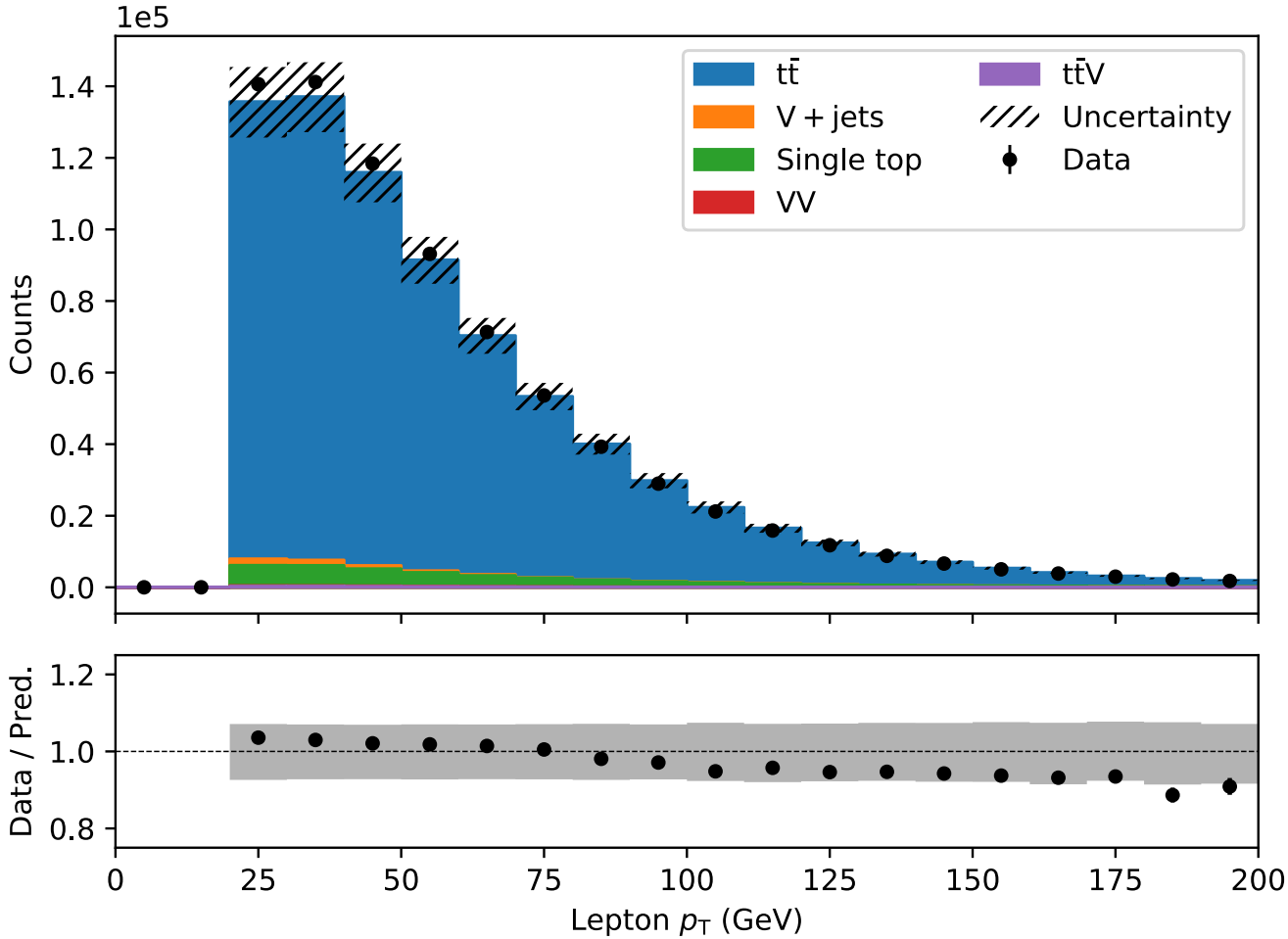
Data and cuts

- 2018 data with 59.69 fb^{-1} (Golden JSON)
- Only recommended triggers for MuonEG, SingleMuon, DoubleMuon, EGamma
- Recommended MET filters applied
- Electron and muon scale factors applied
- Now with systematics
  - Fixed parton shower, matrix element and b-tag

- Electron ID: Isolation WP90
- Muon ID: Cut-based medium, loose iso
- Exactly two opposite sign same flavor leptons
- Leading lepton $p_T > 25$ GeV, Subleading > 20 GeV
- $M_{ll} > 20$ GeV
- Z window cut (from 76 GeV to 106 GeV)
- At least 2 jets
- Jet $p_T > 30$ GeV
- At least one b-tag
- MET > 40 GeV

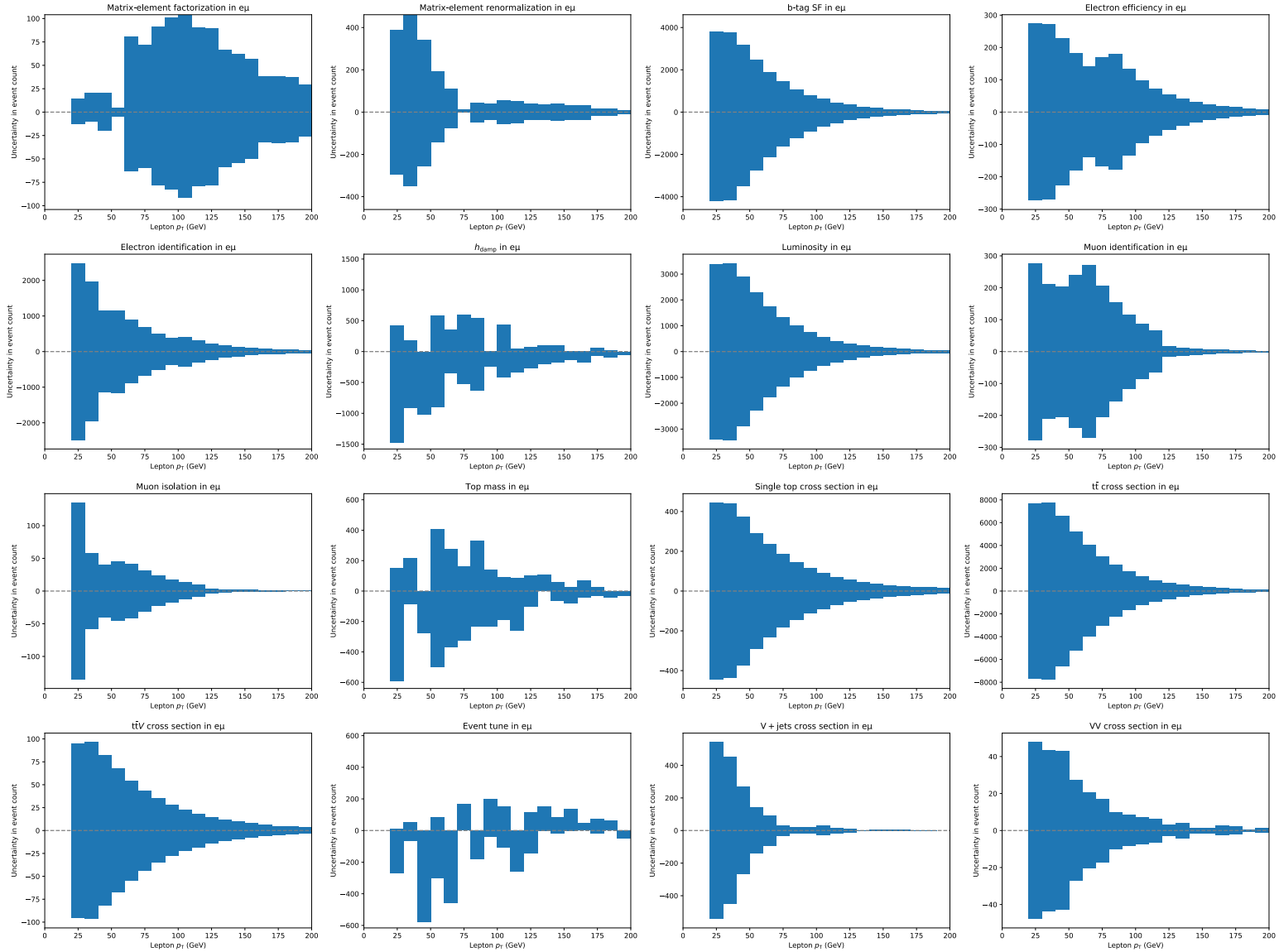
Lepton p_T in eμ

All cuts applied

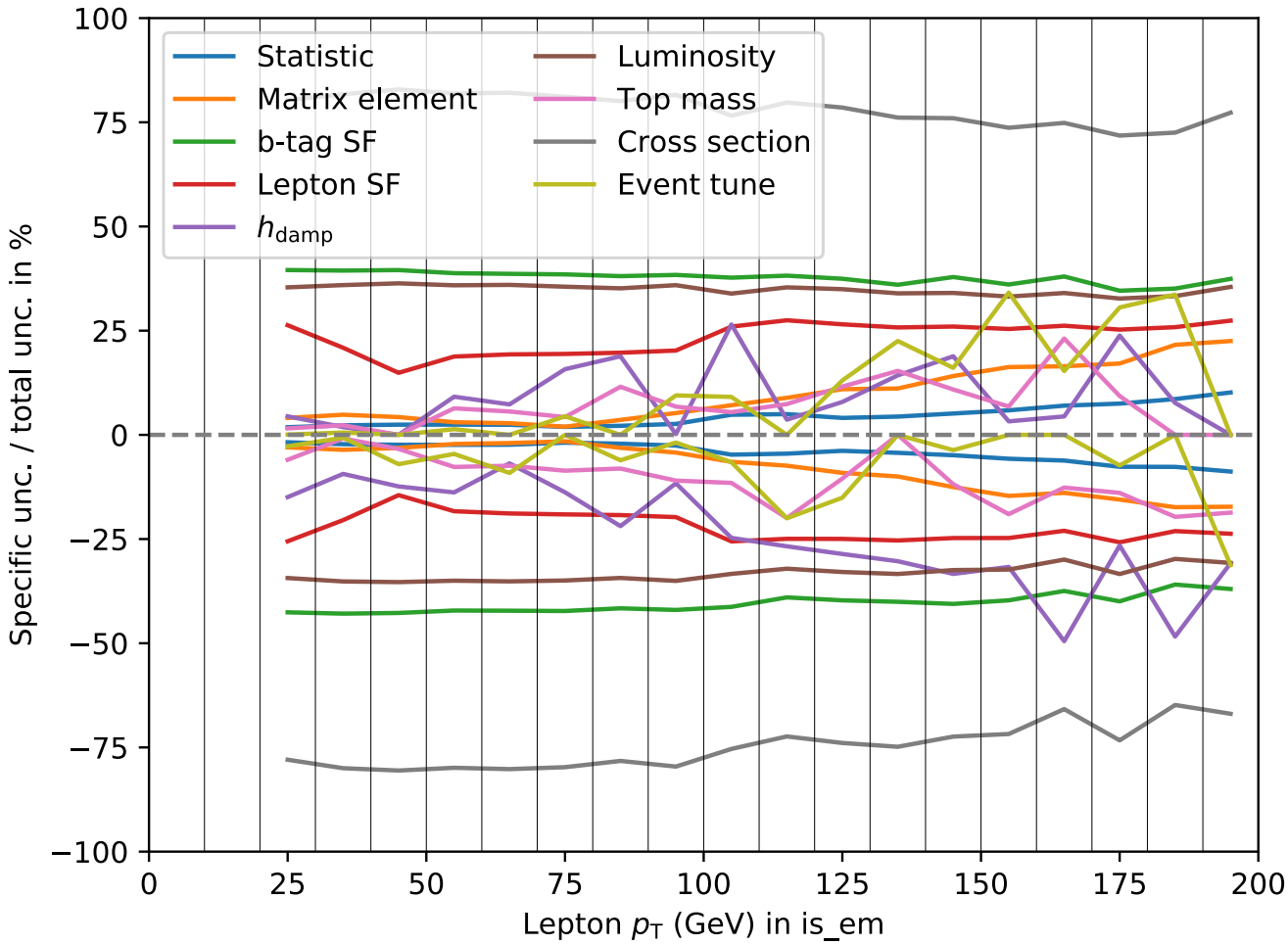


Uncertainties look fine

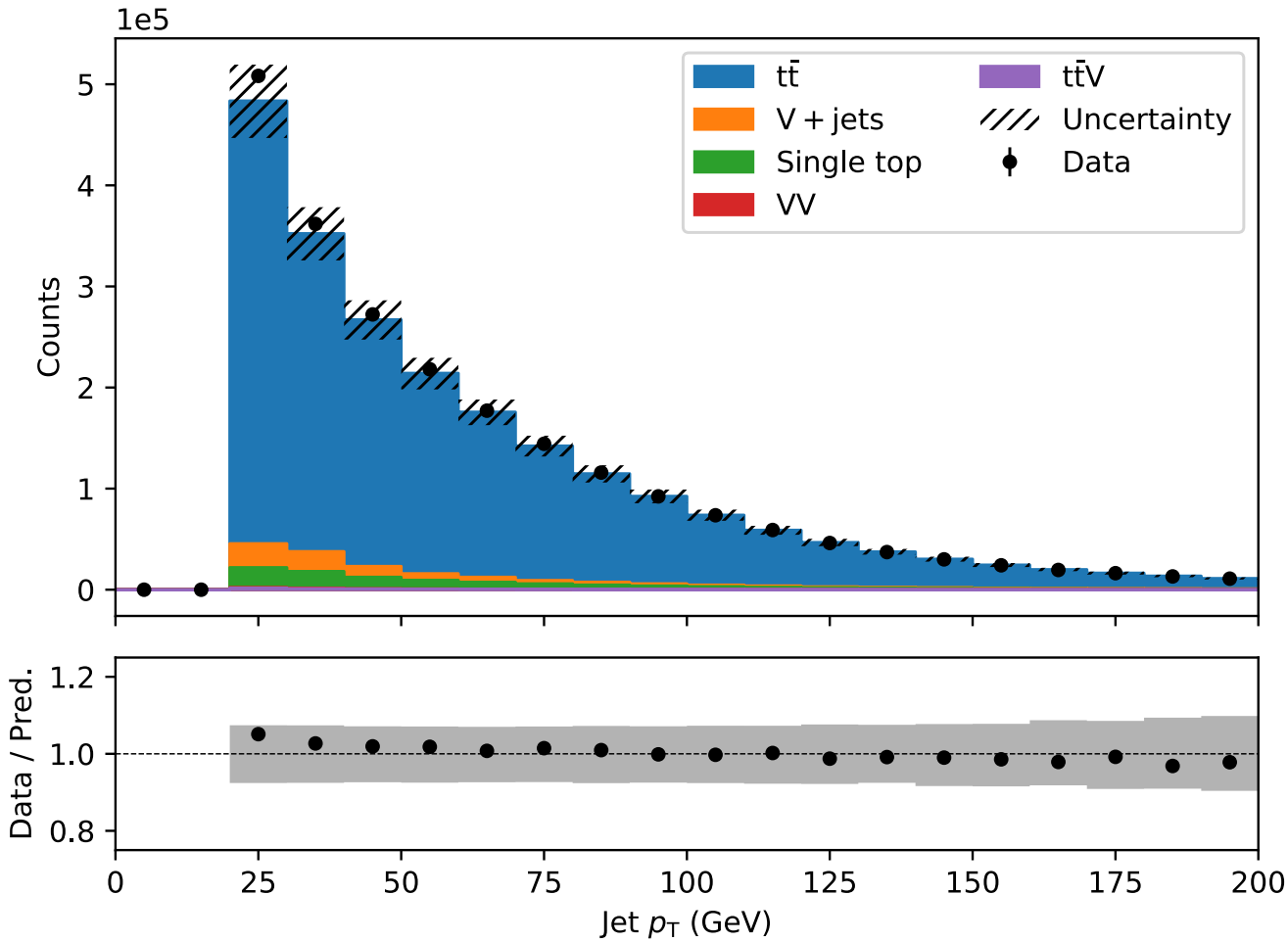
Lepton p_T in eμ - Uncertainty sources



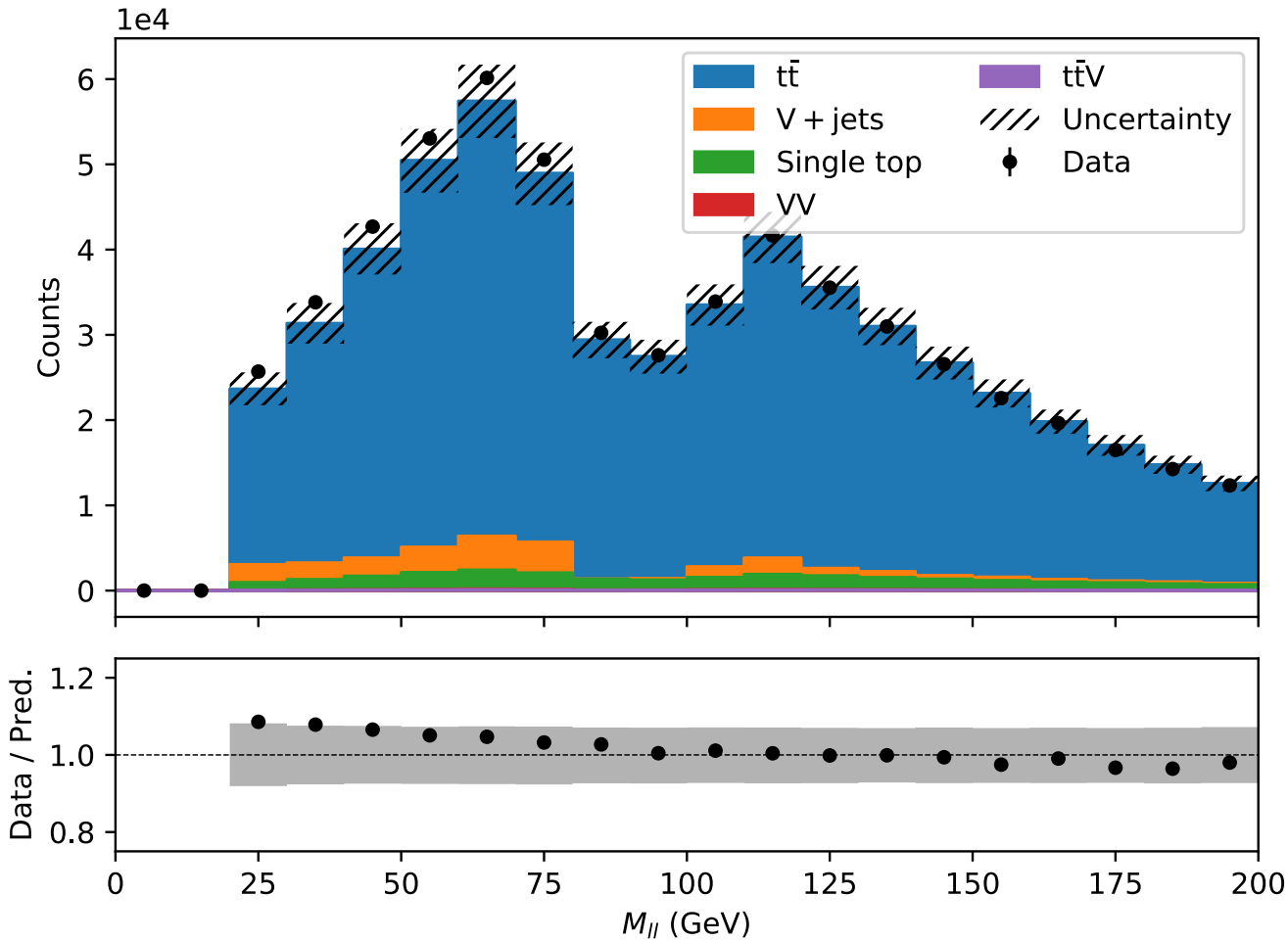
Lepton p_T in eμ - Sources contribution



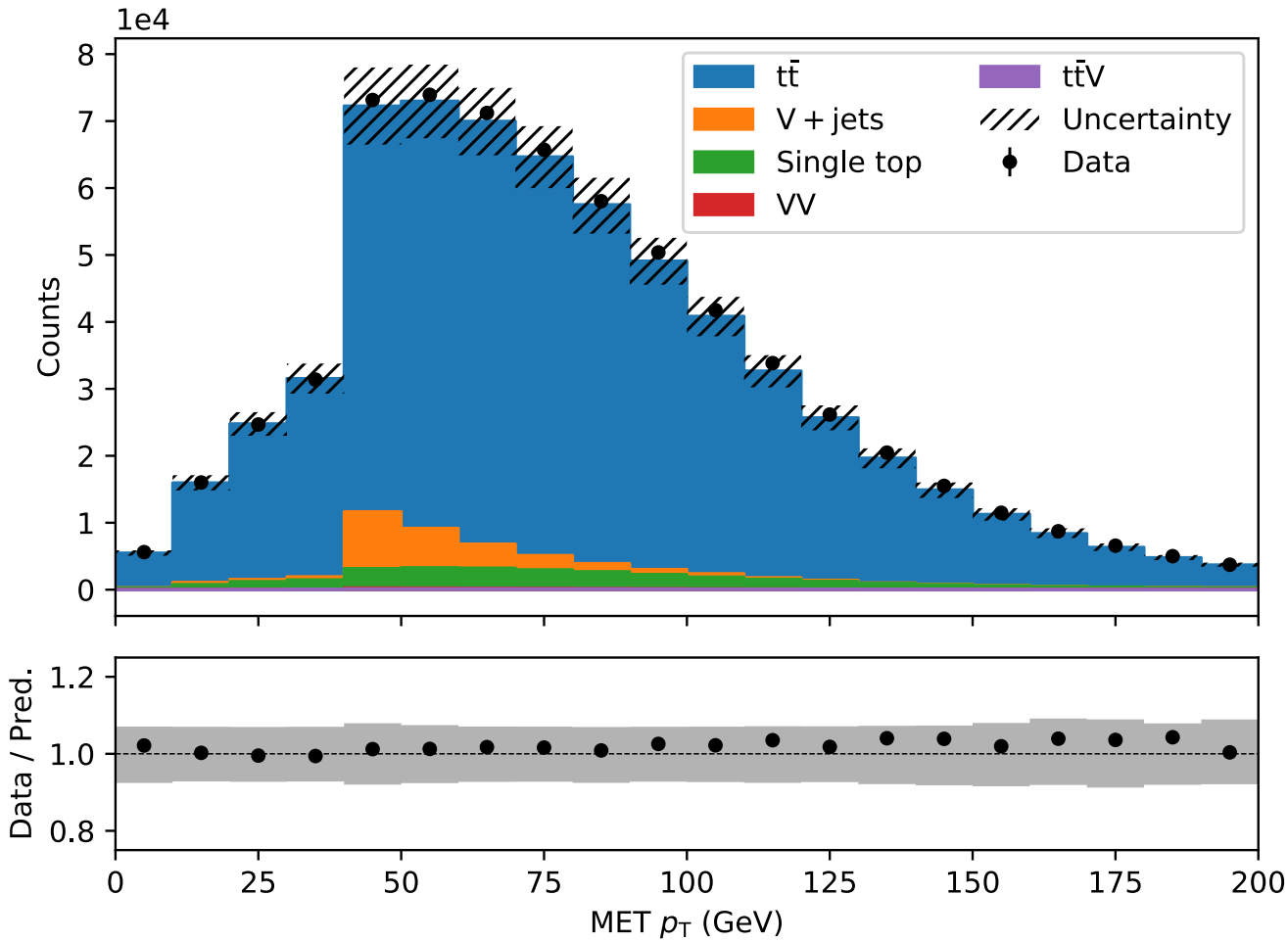
Jet p_T in all channels



M_{ll} in all channels

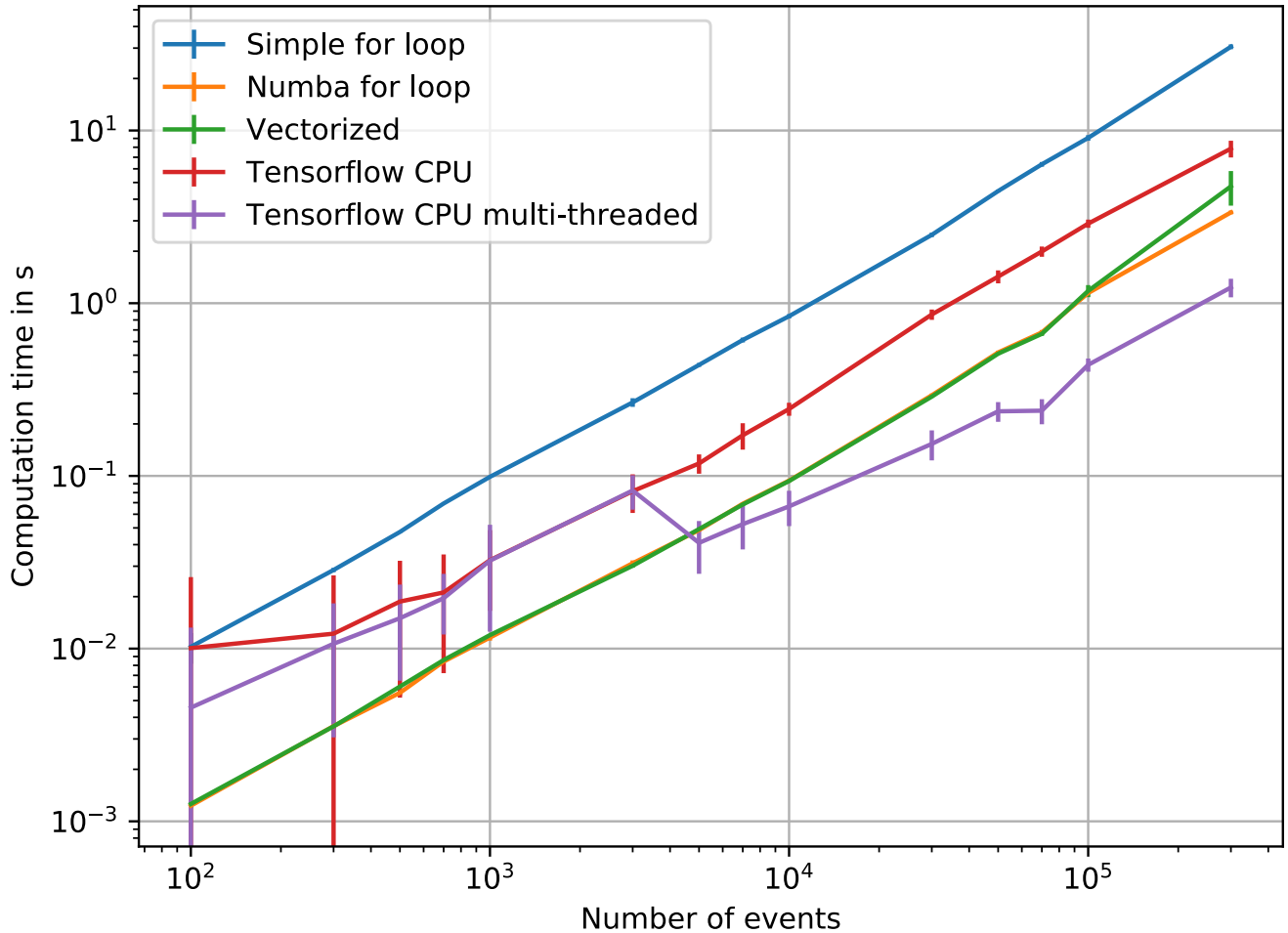


MET in all channels



Solving the kinematic reconstruction

How fast can one find the roots of a 4th order polynomial?



Thank you