

Karl Nordström (Glasgow/Heidelberg)

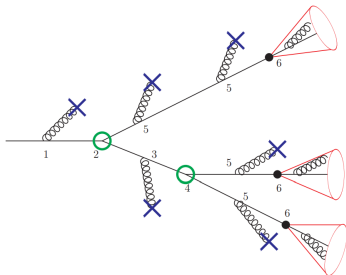
- ▶ Phenomenology PhD student at Glasgow (October 2014 -)
- ▶ Supervised by Christoph Englert
- ▶ Worked on LHAPDF and a bit of Rivet
- ▶ Short-term studentship at Heidelberg working on HEPTopTagger with Tilman Plehn

Studentship project in short

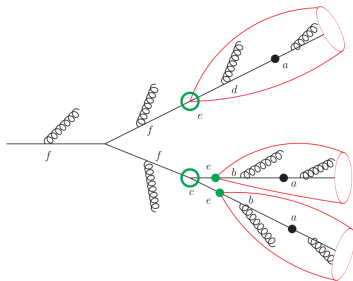
Idea: use mass-jump clustering ([1410.4637](#)) to resolve hard prongs for tagging purposes instead of mass-drop declustering.

- ▶ Could be used in very busy hadronic environments such as all-hadronic $t\bar{t}H$?

mass-drop unclustering of a fat jet



mass-jump clustering



Conclusions

- ▶ Need to define geometric regions of detector which we tag on to cut down multi-jet background
- ▶ At low p_T decay products start to overlap
- ▶ At higher p_T nothing gained compared to normal HTT

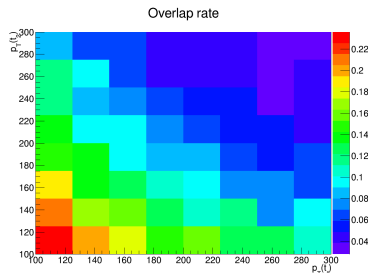


Figure: Idealised overlap rate of t, \bar{t} decay products at parton level in all-hadronic $t\bar{t}H$.