

Electroweak couplings from $t\bar{t}$ 6f and $b\bar{b}$

Short description.

This benchmark is a challenge of reconstructing multi-jet final state with flavour tag and vertex charge. Main focus is currently on 6-jet ($b\bar{b}q\bar{q}q$) and 4-jet ($b\bar{b}q\bar{q}l\nu$) final states.

$b\bar{b}$ final state is also being investigated with the same framework.

Main observables.

x-section measured with both beam polarizations, Polar angle (A_{FB}) measured with both beam polarizations

Control variables.

b-tag, c-tag, vertex charge, dE_{dx} , M_{top} , M_W ,

Physics quantities.

form factors, electroweak couplings, distinction between left- and right-handed couplings,

People.

Sohail Amjad, Adrian Irlles, Yuichi Okugawa, Roman Pöschl, Ryo Yonamine

Reviewers.

Marcel Vos

References.

- Sviatoslav's software (vertex charge)
 - Not yet public, still need to clean up, but it works without modification. Contact to [Roman Pöschl](#) for the moment.
- Sviatoslav's paper
 - summary version : <https://arxiv.org/abs/1709.04289>
 - full version will be shortly available online.
- Git
 - https://github.com/ILDAnaSoft/ILDbench_QQbar
- $t\bar{t}$ paper pre-print
 - <https://arxiv.org/abs/1505.06020>

Versions of the Note



idr-hf-v1-0.pdf



comments-mv-v1-0.txt



idr-hf-v1-2.pdf



comments-jl150919.txt



idr-hf-v1-3.pdf



idr-hf-v1-4.pdf

Efficiencies and acceptances



purity_v3-eps-converted-to.pdf



purity_v3.C



acceptance_2mo...nverted-to.pdf



acceptance_2models_v2.C



kaonIDeff_v2-ep...onverted-to.pdf



kaonIDeff_v2.C



p_value_I5_ele_...onverted-to.pdf



p_value_I5_ele_mu_noLcut-v1.C

Results



result2models_v...onverted-to.pdf



result2models_v3.C



compare_normalized.pdf



compare_normalized.C



compare_normalized_b.pdf



compare_normalized_b.eps



compare_normalized_eRpL.pdf



compare_normalized_eRpL.C



compare_norma...ed_eRpL_b.pdf



compare_normalized_eRpL_b.C

Interpretation of results (ttbar)



coupl1clhc.pdf



coupl2.C



couplall.pdf



couplall2.C

Supplementary information



result-Lmodel_c...ionsteps_v1.pdf



result-2models_...orrected_v1.pdf

Different steps of corrections
in eebb

Comparison of IDR-L and IDR-S
in eebb before any correction



result-Lmodel_c...ctionsteps_v1.C



result-2models_...ncorrected_v1.C