MC Closure Test for BBJ vs BBB

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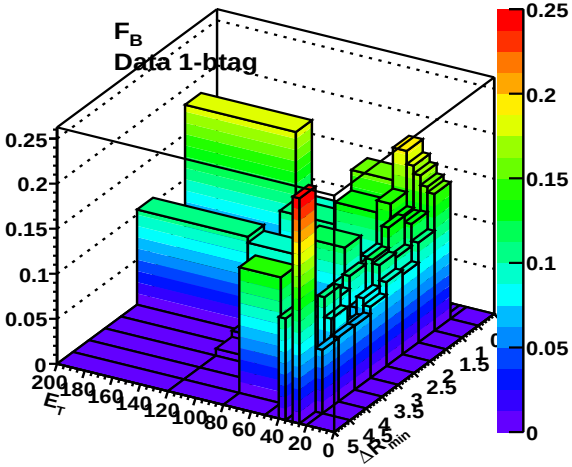
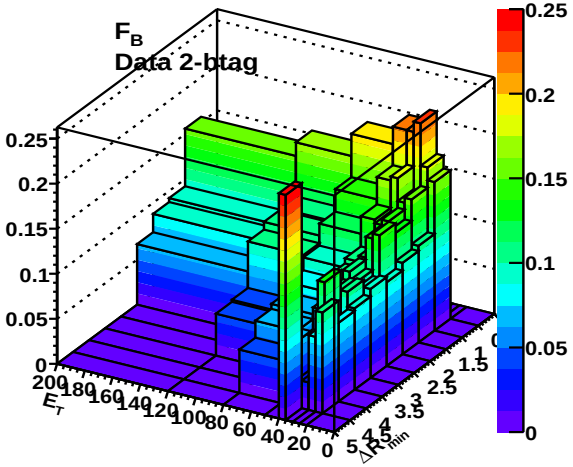
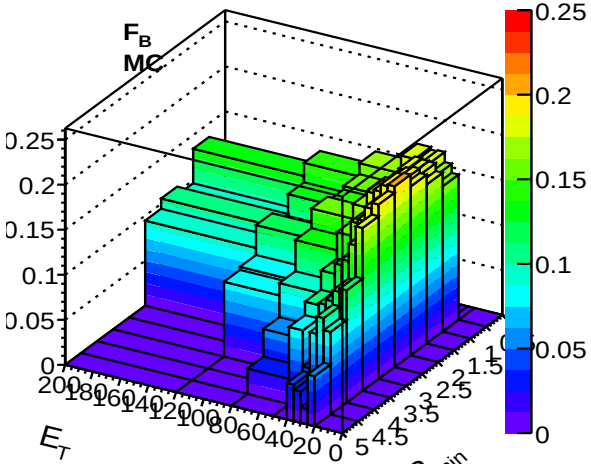
INFN Padova

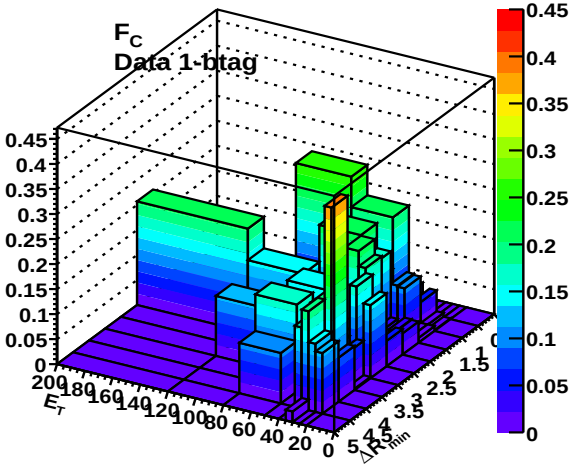
PD meeting,
PD, 27 January 2012

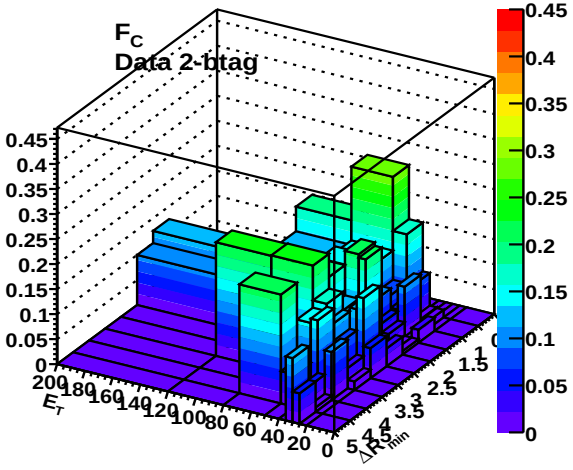
Flavour fractions for single and double btag HLT and MC

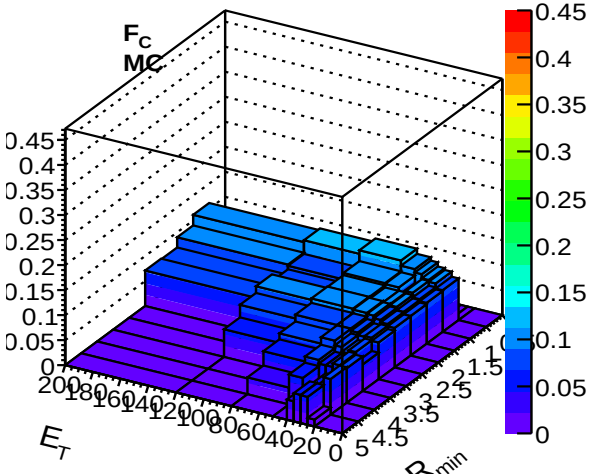




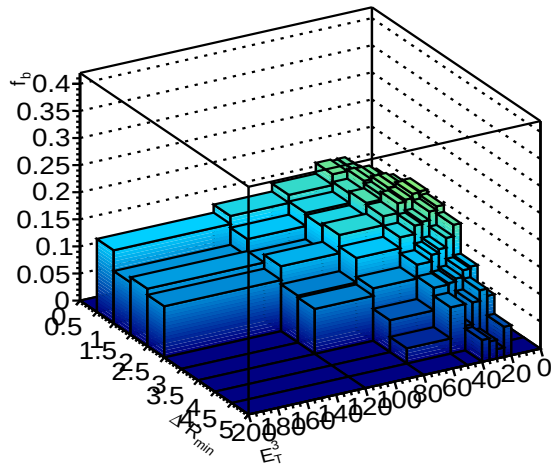


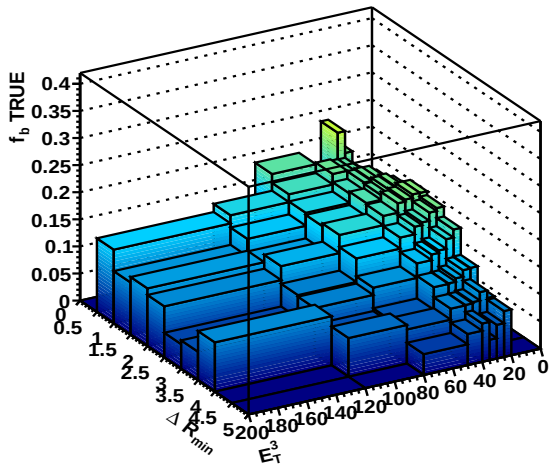


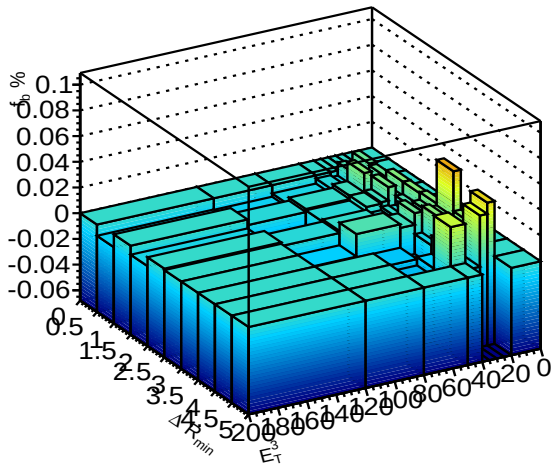


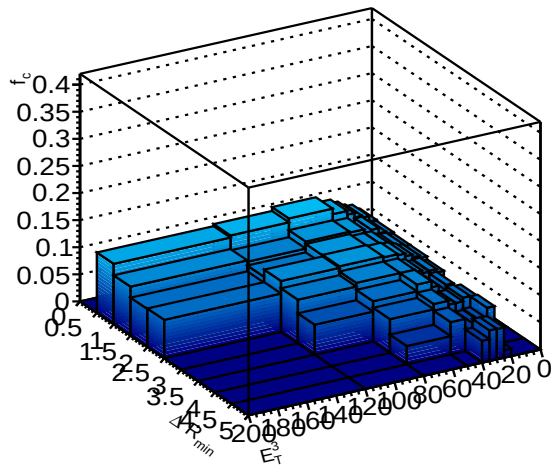


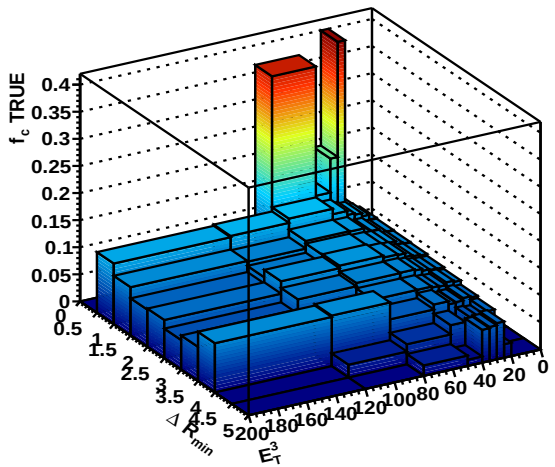
Flavour fract. Fit vs MC truth

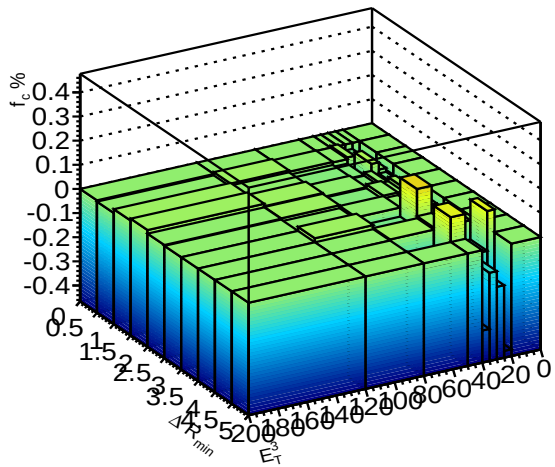






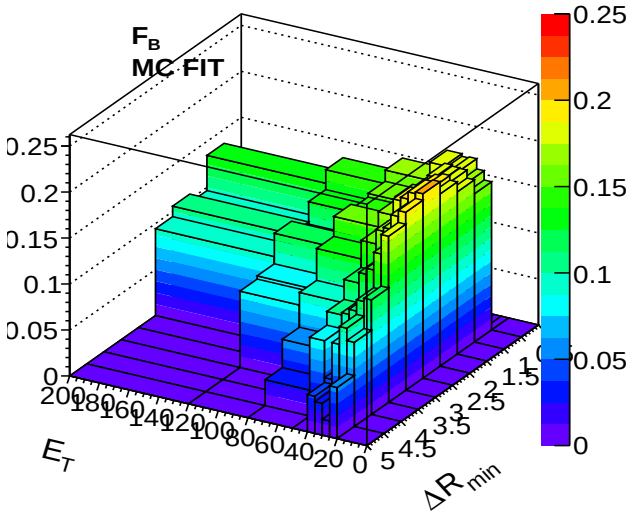


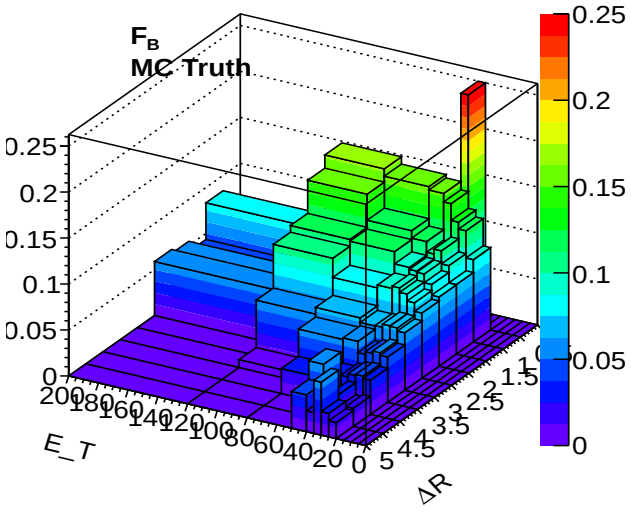


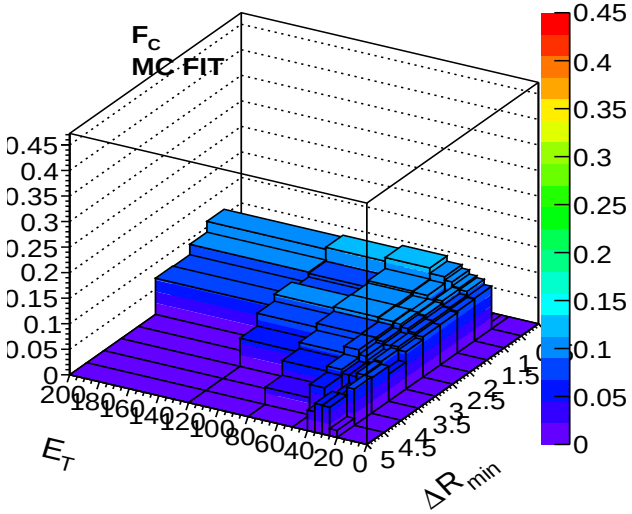


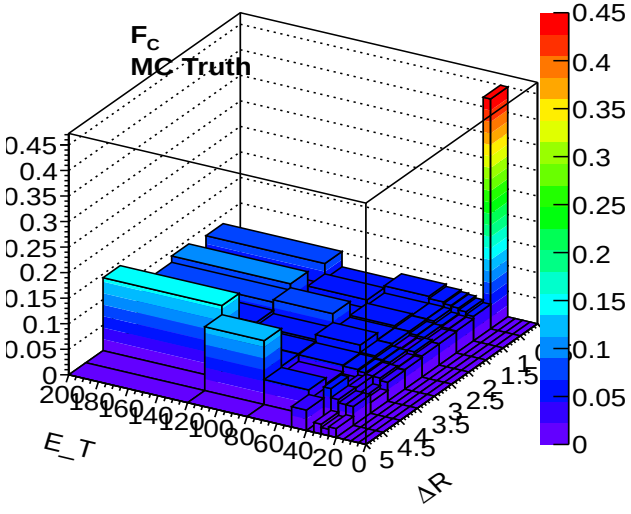
Flavour fract. Fit vs MC truth (Stefano)

Which truths?





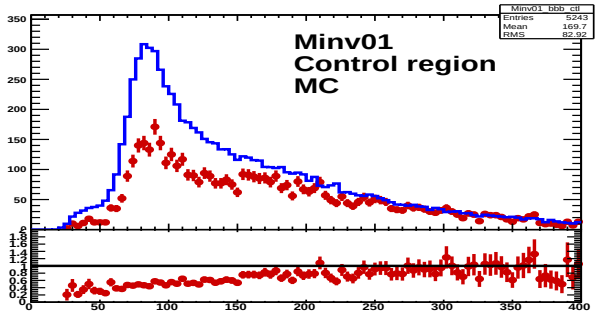


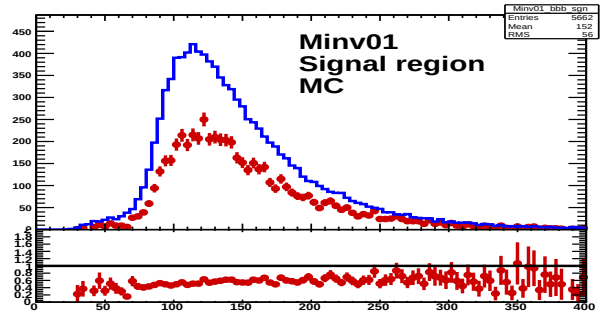


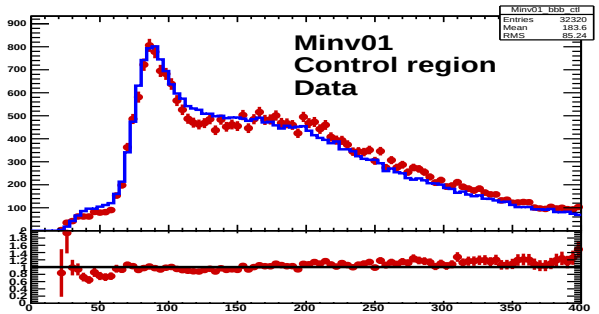
Closure test with FB from fit

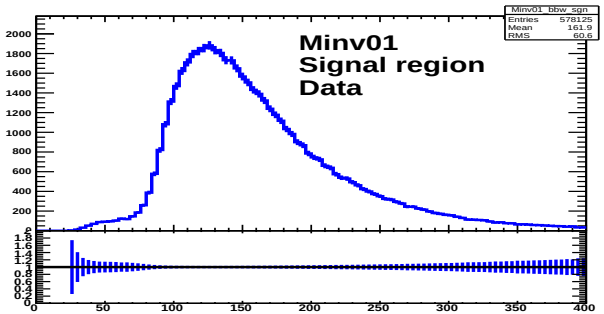
what I did

- Use FB from Alberto's Fit
- The prediction is sensibly higher than measurement in both control and signal region





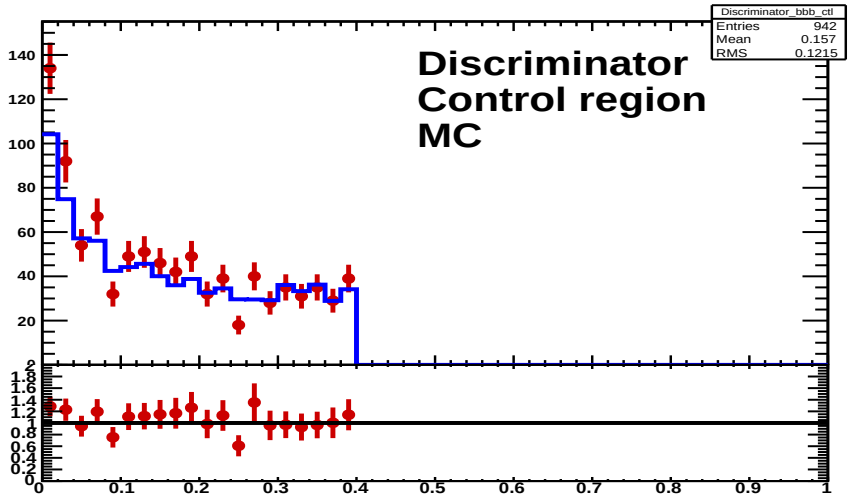




Closure test with Efficency only

what I did

- Use the true flavour of each jet (as per MC) to decide which is the probability
- the probability is just the efficiency, for the truth jet flavour;
- the jet flavour determination is done jet by jet, and not via some kind of parametrization
- the efficiency, instead, is parametrized.
- The agreement is GOOD (next slide), so the efficiency are fine, at least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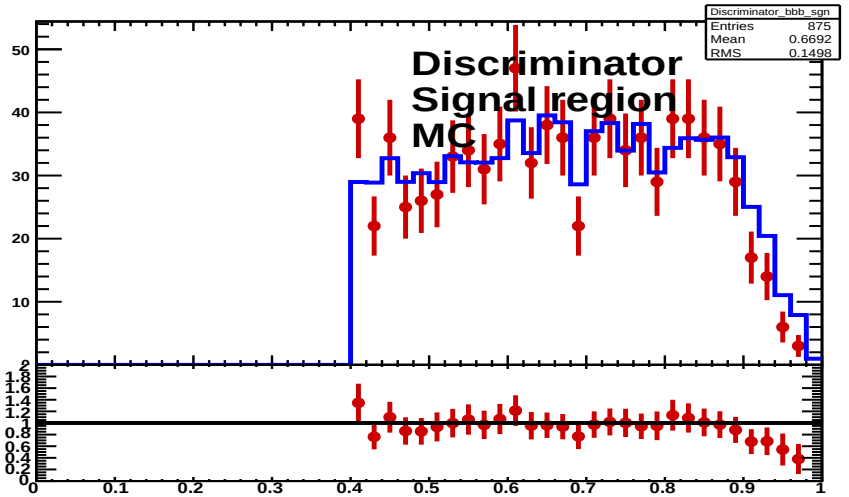
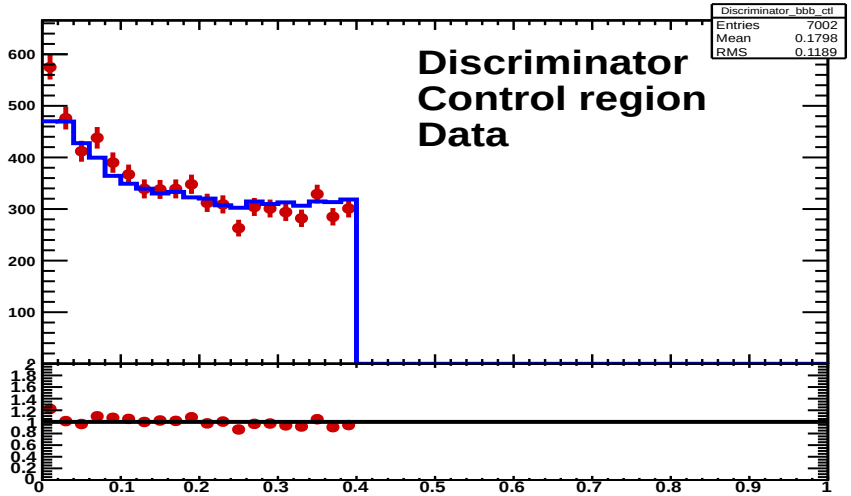
Entries 942
Mean 0.157
RMS 0.1215
Discriminator
Control region
MC


Discriminator_bbb_sgn
Entries 875
Mean 0.6692
RMS 0.1498
Discriminator
Signal region
MC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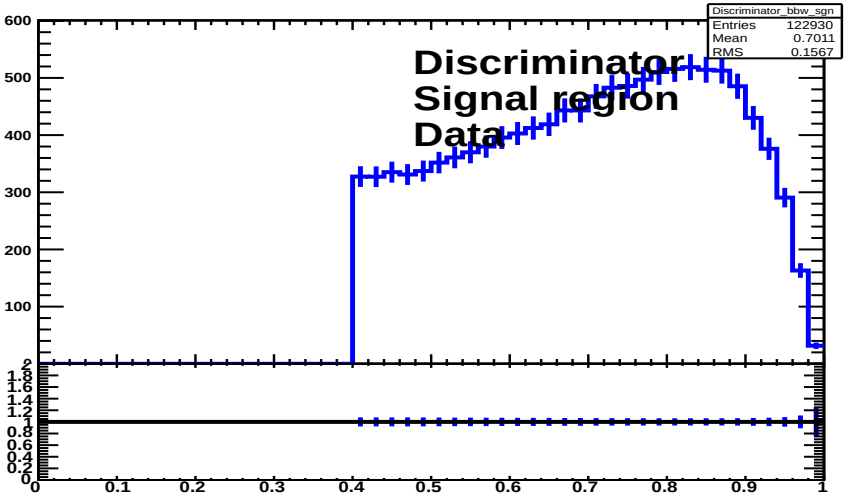
Entries 7002
Mean 0.1798
RMS 0.1189
Discriminator
Control region
Data


Discriminator_bbw_sgn
Entries 122930
Mean 0.7011
RMS 0.1567
Discriminator
Signal region
Data

Closure test with FB MC truth

what I did

- Use FB from MC truth but in parametrized way.
- Not bad, in control region is a bit high, with a strange shape, good in signal one
- TODO try to us a better binning for the parametrization (Et, DR), with variable with binning.