

Fully Hadronic Samples Check - Preliminary

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ILD sw/ana Meeting

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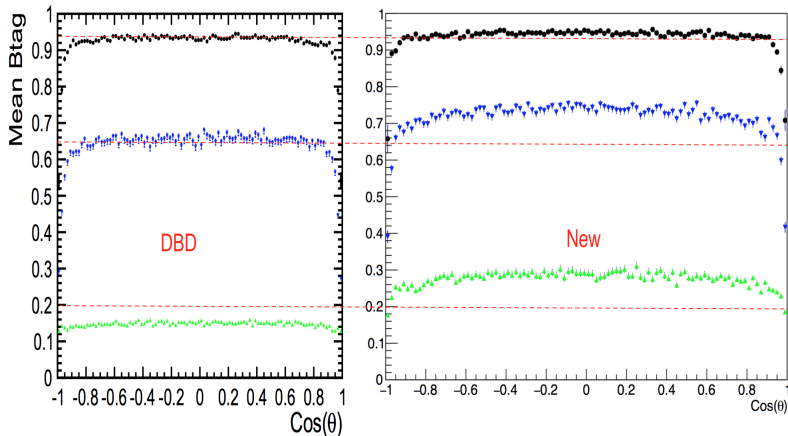


Data Samples and Software version

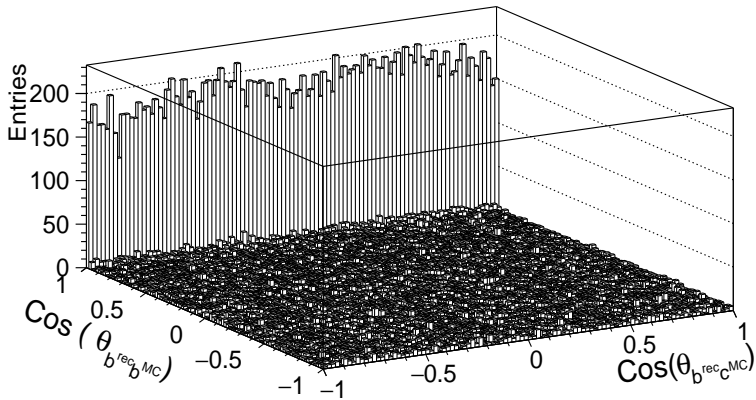
- 6f_ttbar samples, fully hadronic decay mode, 500 GeV with both polarisations.
- Total Number of Events processed: 80000, (52% for e_L^- , 48% for e_R^-)
 - The results in this talk are only for $e_L^- e_R^+$ samples.
- Processes: *yycyyc, yycyyu, yyuyyc, yyuyyu.*
- Detector:
 - ILD_l5_o1_v02 (for simulation and reconstruction).
 - ILD_o1_v05 (for flavor tagging and analysis).
- ILCSoft v01-17-11, Marlin v01-09,
- LCFIPlus v00-06-05. lcfiweights prefix:6q500_v01_p01

b -tagging performance comparison

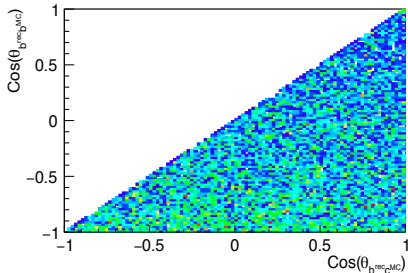
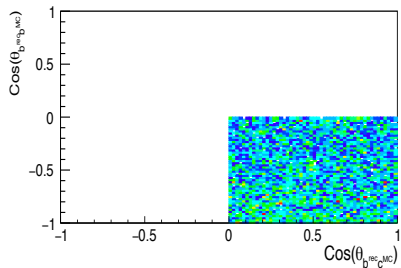
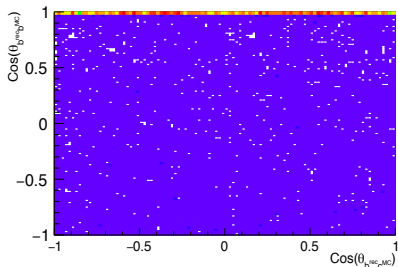
Two jets with highest b -tag value are chosen as b jets.



b/c mis-tagging (old)

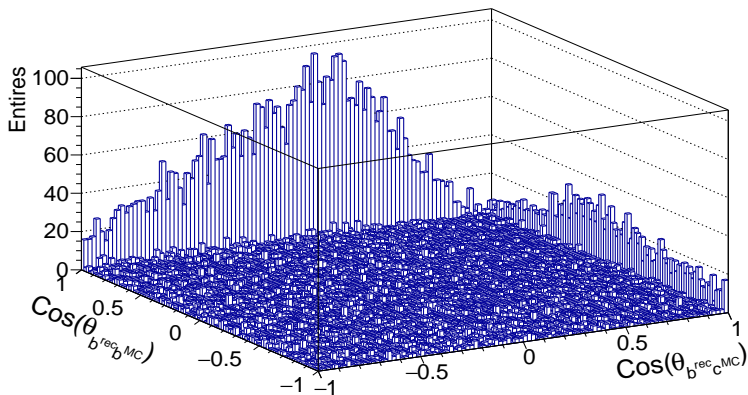


b/c mis-tagging (old)



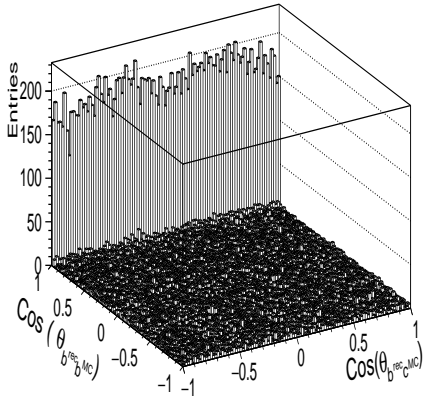
Angle	Events Jet1 (%) All	Events Jet1 (%) Above b-tag 0.3	Events Jet2 (%) All	Events Jet2 (%) Above b-tag 0.3
left-handed Polarization ($e_L^- e_R^+$)				
$\theta_{b^{\text{rec}}^c}^{\text{MC}} < \theta_{b^{\text{rec}}^b}^{\text{MC}}$	12	11	13	8
$\theta_{b^{\text{rec}}^c}^{\text{MC}} < \theta_{b^{\text{rec}}^b}^{\text{MC}}$	8	8	9	6
$\theta_{b^{\text{rec}}^c}^{\text{MC}} < \pi/2$				
$\theta_{b^{\text{rec}}^c}^{\text{MC}} < \theta_{b^{\text{rec}}^b}^{\text{MC}}$	6	6	6	4
$\theta_{b^{\text{rec}}^c}^{\text{MC}} < \pi/2$				
$\theta_{b^{\text{rec}}^c}^{\text{MC}} > \pi/2$				
right-handed Polarization ($e_R^- e_L^+$)				
$\theta_{b^{\text{rec}}^c}^{\text{MC}} < \theta_{b^{\text{rec}}^b}^{\text{MC}}$	12	11	12	8
$\theta_{b^{\text{rec}}^c}^{\text{MC}} < \theta_{b^{\text{rec}}^b}^{\text{MC}}$	8	8	9	6
$\theta_{b^{\text{rec}}^c}^{\text{MC}} < \pi/2$				
$\theta_{b^{\text{rec}}^c}^{\text{MC}} < \theta_{b^{\text{rec}}^b}^{\text{MC}}$	5	5	6	4
$\theta_{b^{\text{rec}}^c}^{\text{MC}} < \pi/2$				
$\theta_{b^{\text{rec}}^c}^{\text{MC}} > \pi/2$				

b/c mis-tagging (New)

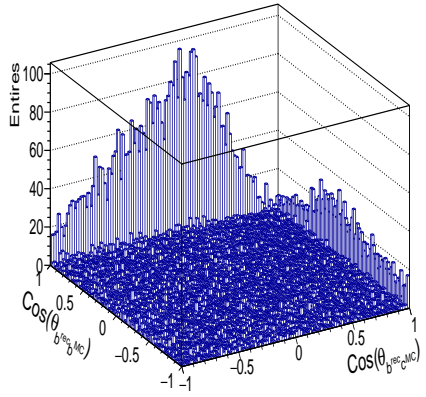


- Jet 2.

Comparison



DBD



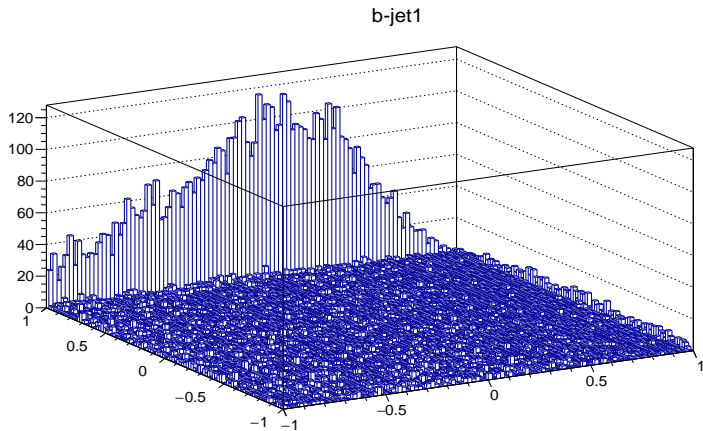
New Samples

Summary

- The mis-tagged b jets which were $\sim 4-6\%$ in the DBD sample, appears to have risen to $\sim 20+\%$ in new samples.
- A higher b -tag cut to select purifies the sample by $\sim 2\%$ which is fairly insignificant.
- The angular distributions show a small bias.
- Work on going to run with the latest version of the software.

THANKS

b/c mis-tagging (New)



- Jet 1.