

MC2008 verification:

$$B \rightarrow D^0 (K_s \pi \pi) K$$

Susan Haines

Data used

DC06 49731 events

Brunel v31r12, Boole v12r10, Gauss v25r13

MC2008 v2 51673 events

Brunel v34r0, Boole v17r1, Gauss v36r0

MC2008 v3 46747 events

Brunel v34r1p1, Boole v17r2, Gauss v36r1

Run with Da Vinci v22r0p2

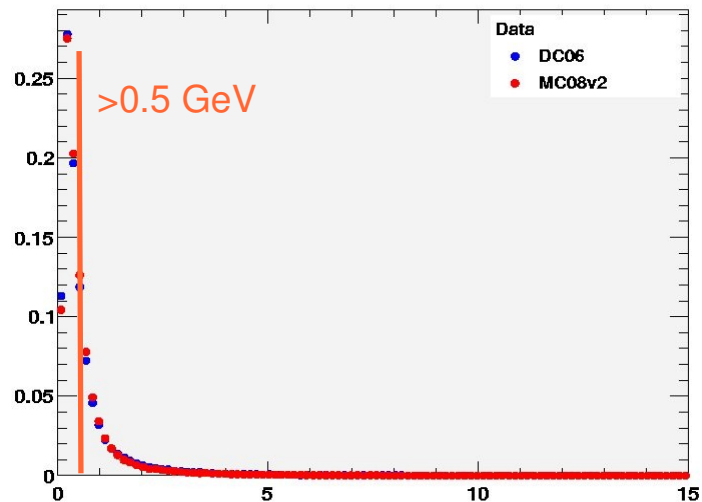
DC06 preselection by Gibson, V., Lazzeroni, C. and Li, Y.
(*LHCb-2008-028*) - rewritten as closely as possible in
CombineParticles framework

Bachelor K cuts



Pt

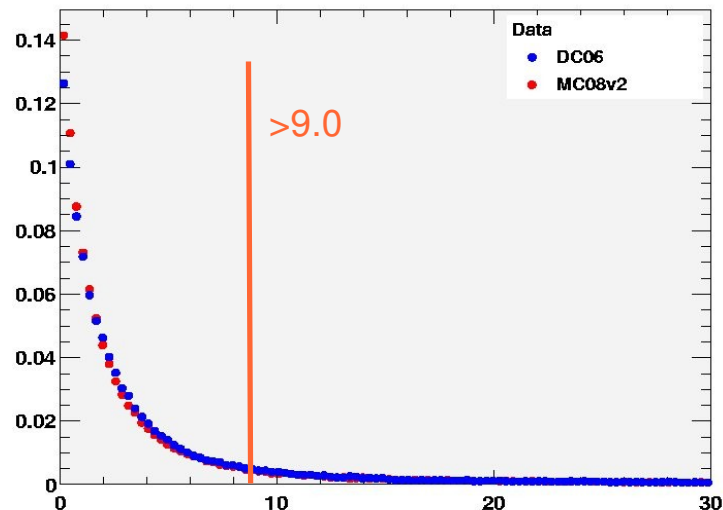
K Pt in GeV



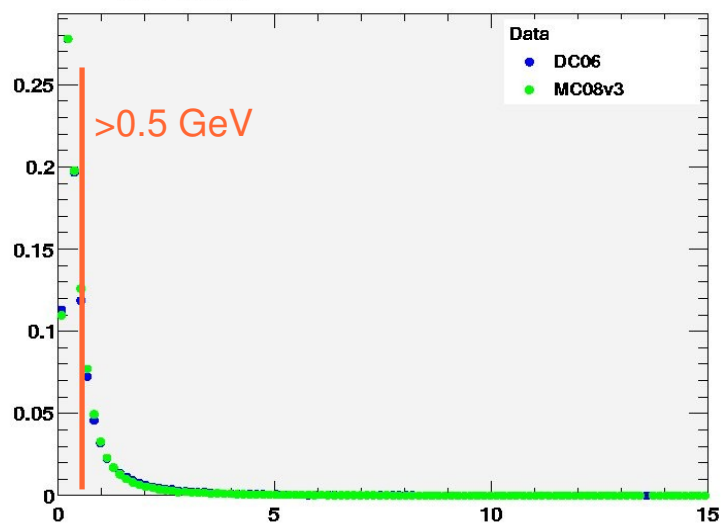
v2

Impact parameter χ^2

K min IP chi2

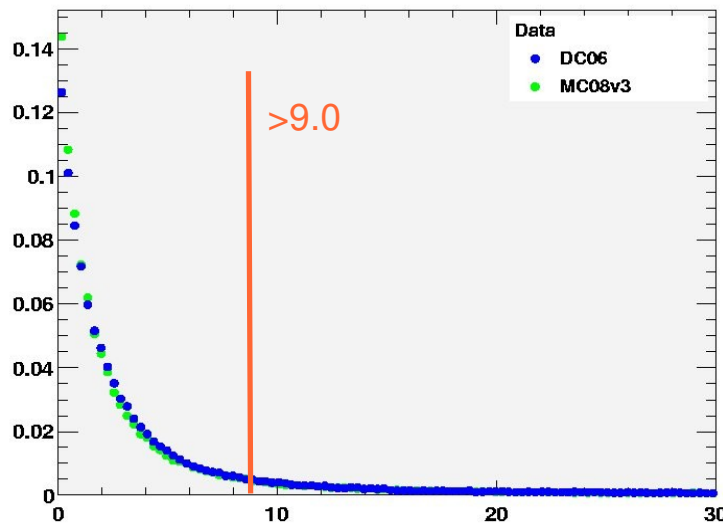


K Pt in GeV



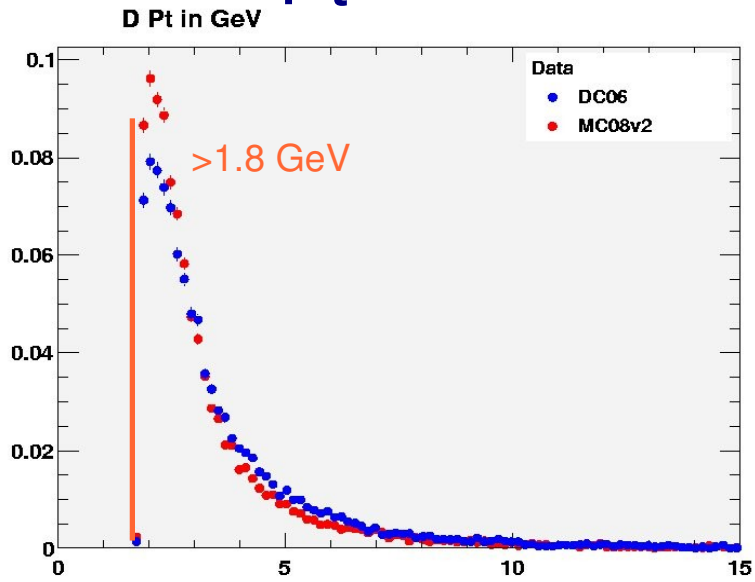
v3

K min IP chi2

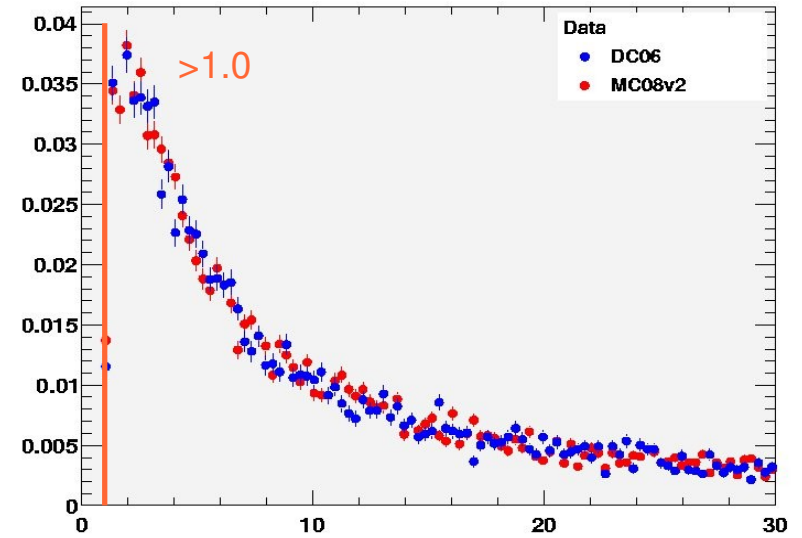


D⁰ cuts

Pt

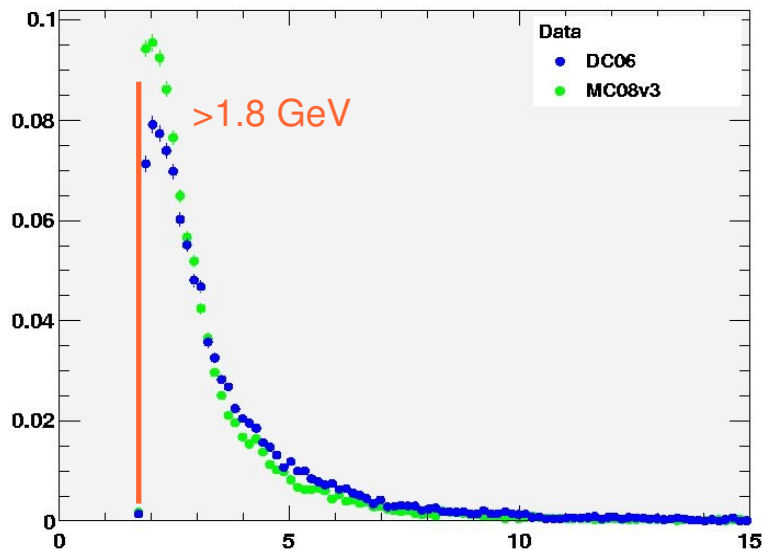


Impact parameter χ^2

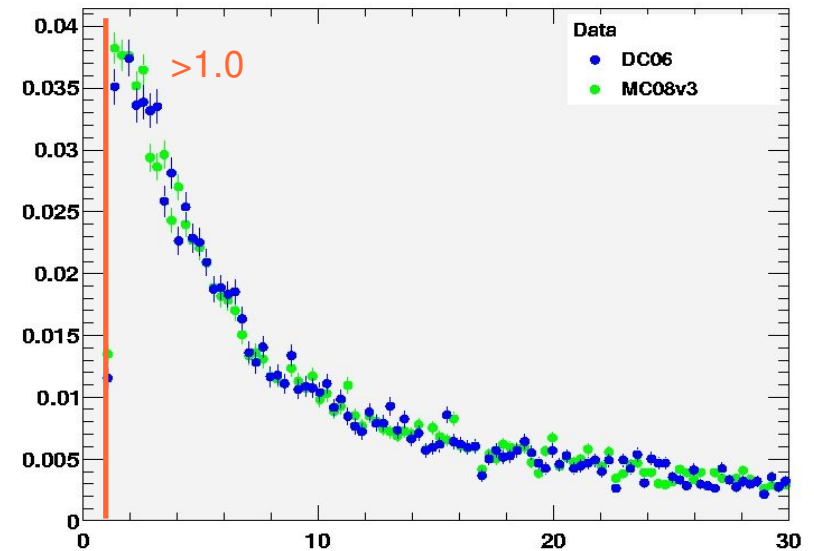


v2

D Pt in GeV



D min IP chi2

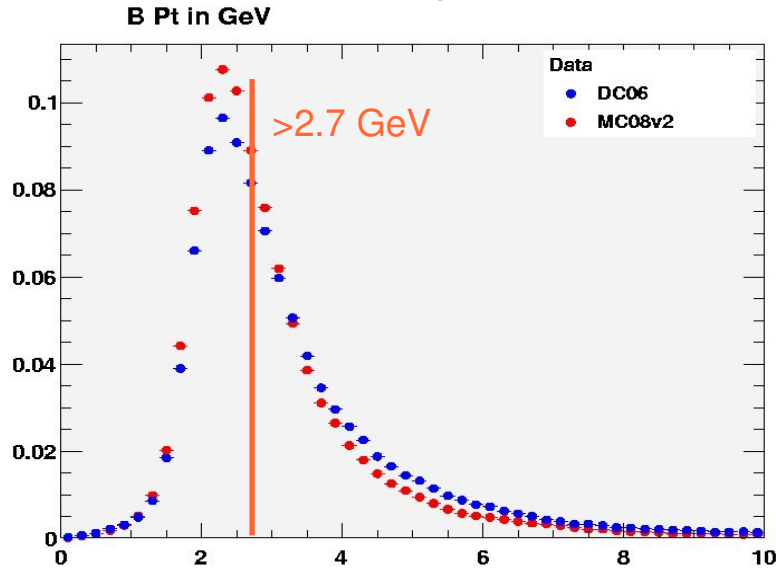


v3

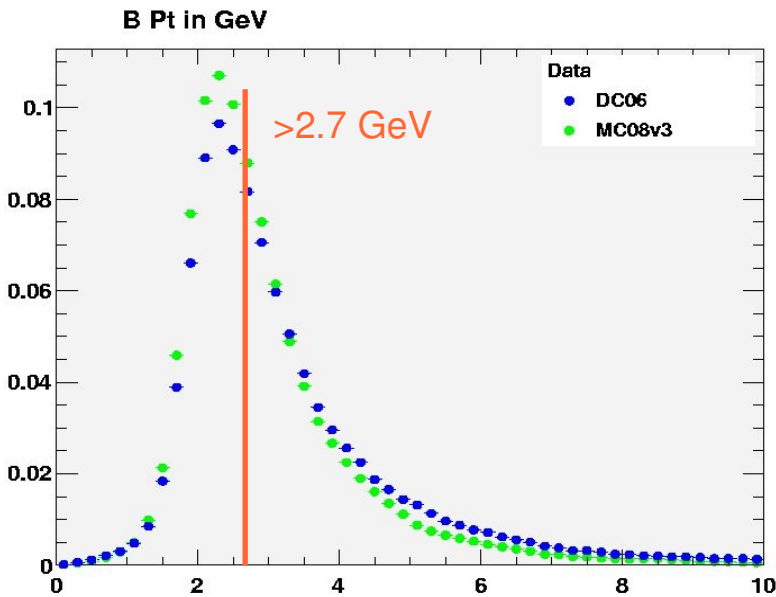
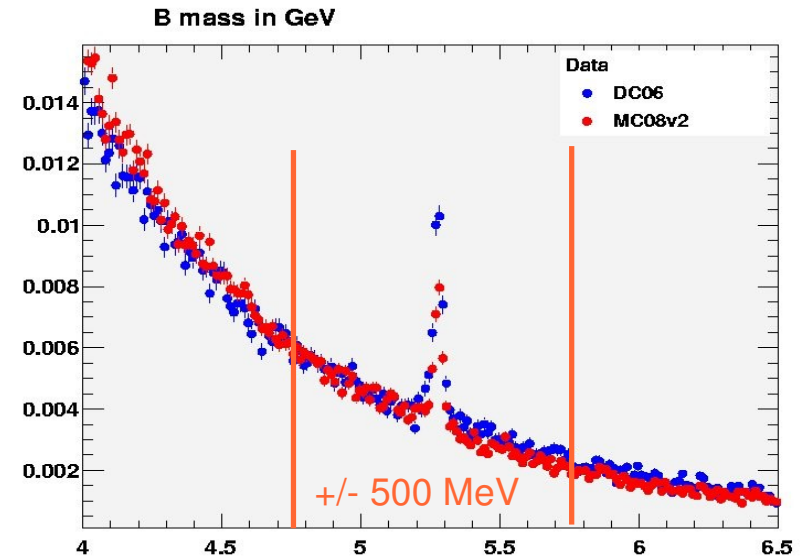
B (combination) cuts

Pt

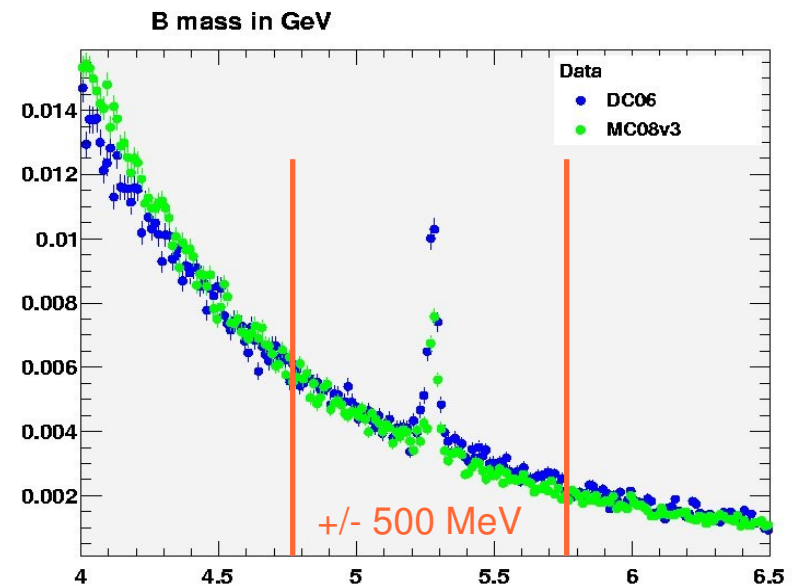
Mass



v2



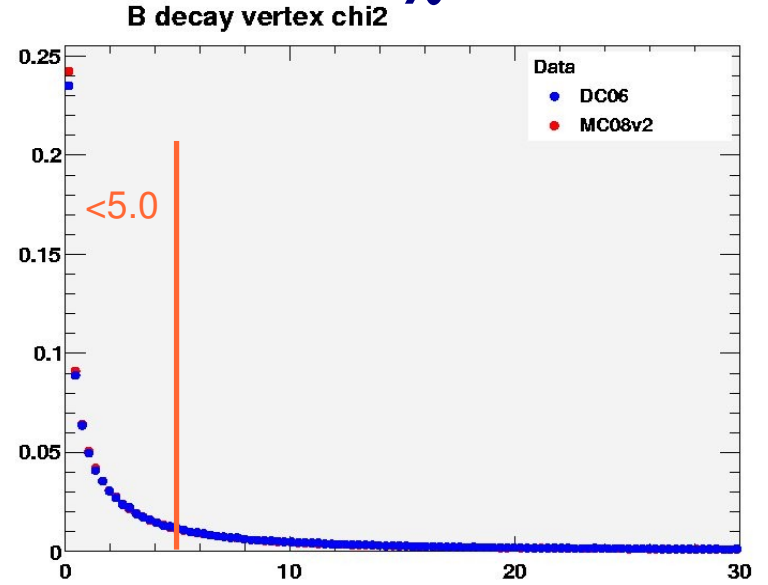
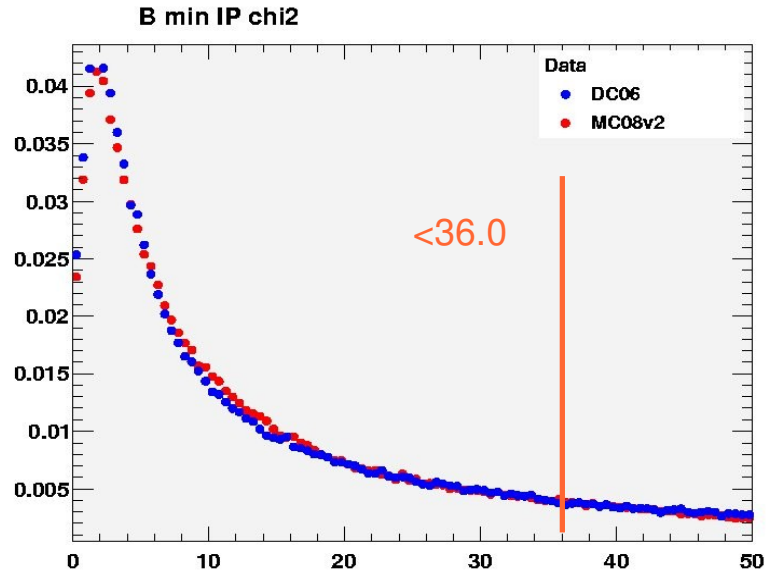
v3



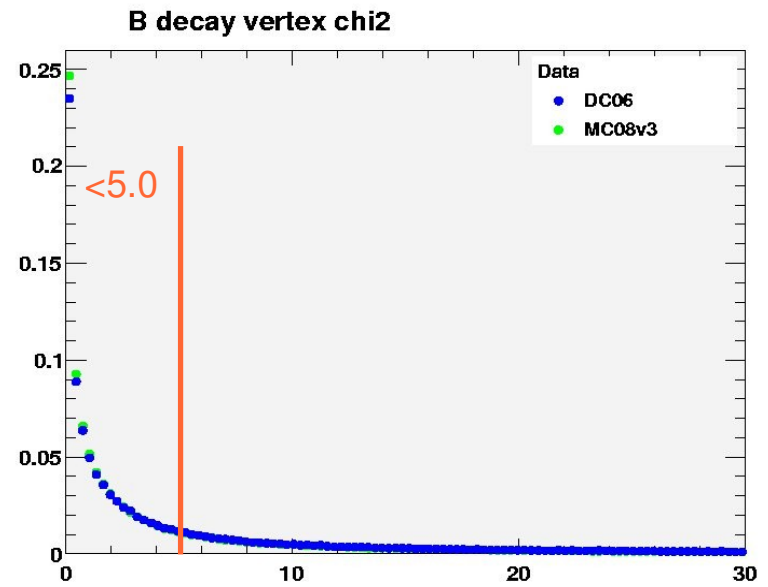
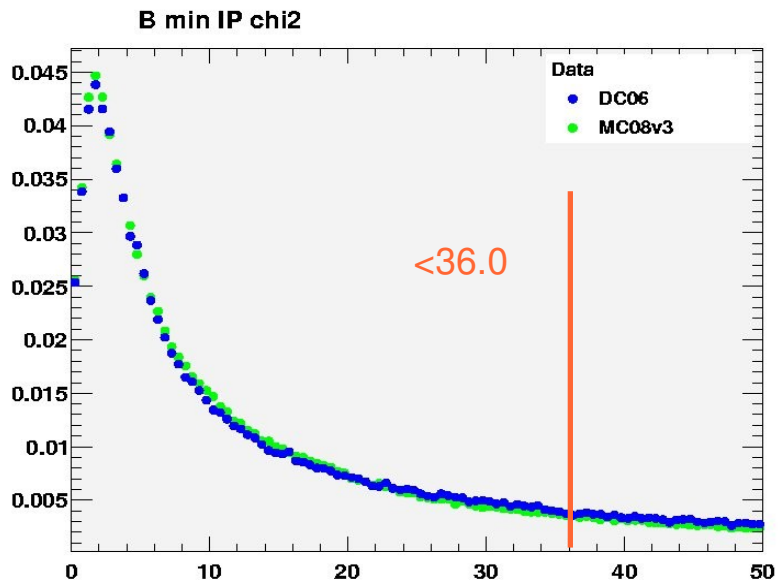
B (mother) cuts

Impact parameter χ^2

Vertex χ^2 / DOF

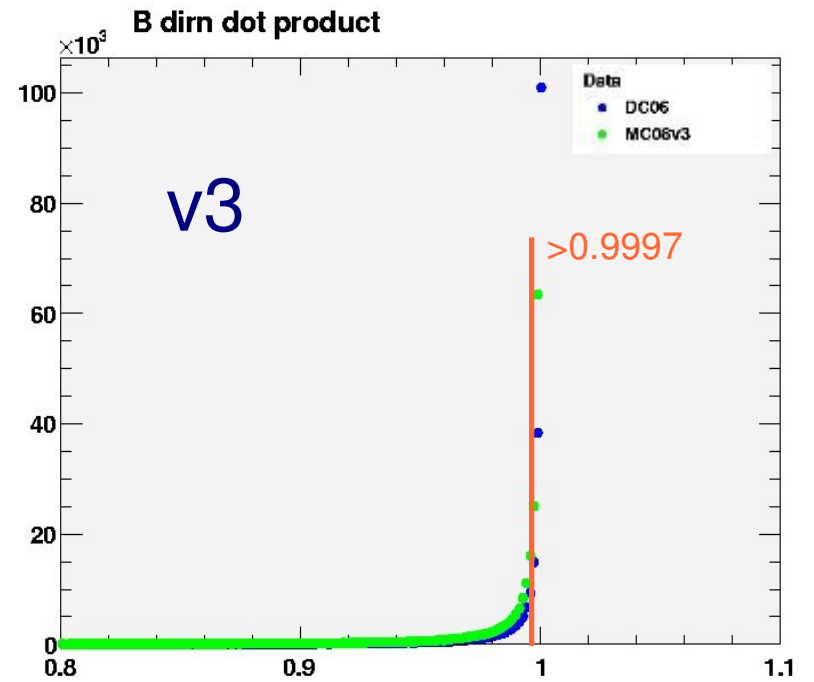
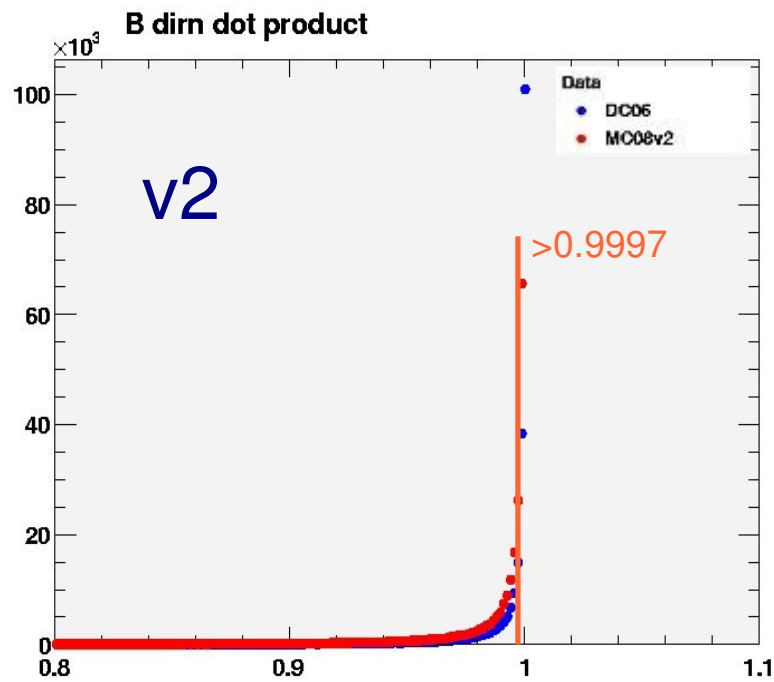


v2

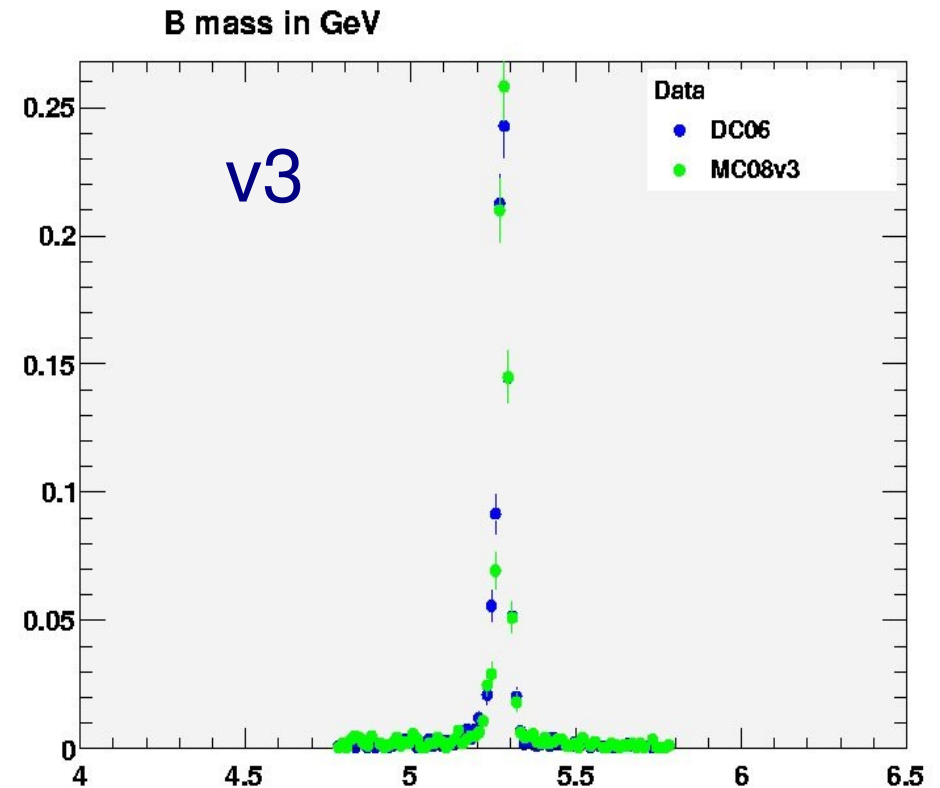
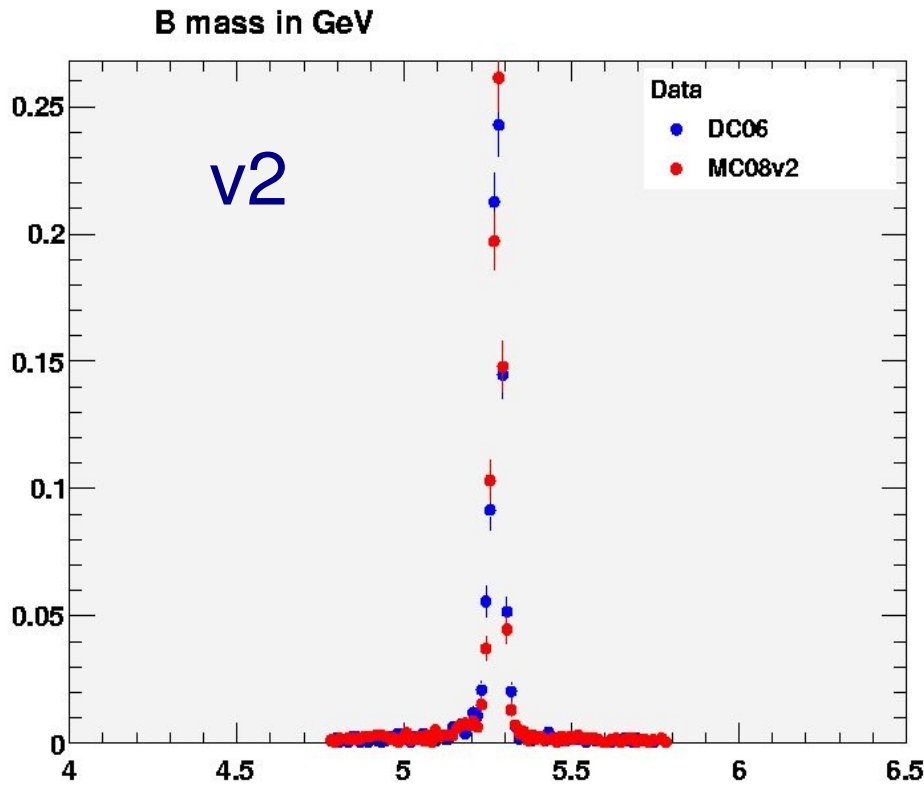


v3

DIRA (direction angle)



B mass after DC06 preselection



Presel efficiencies: v2 2.9%, v3 2.9% (c.f. DC06 3.1%)

Problem

Problem with MC association: use of DecayTreeTuple
TupleToolMCTruth and TupleToolMCBackgroundInfo
causes seg faults – similar to problems reported to DV
mailing list by N. Mangiafave in January

Conclusion

Distributions match DC06 closely, with a very small change
in preselection efficiency