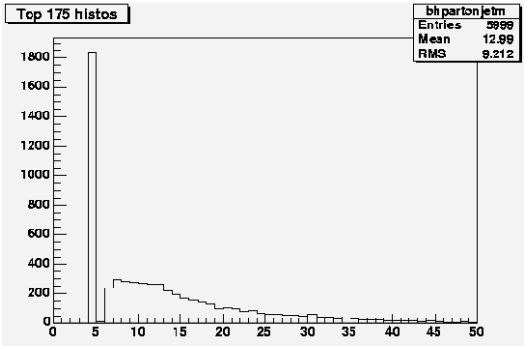
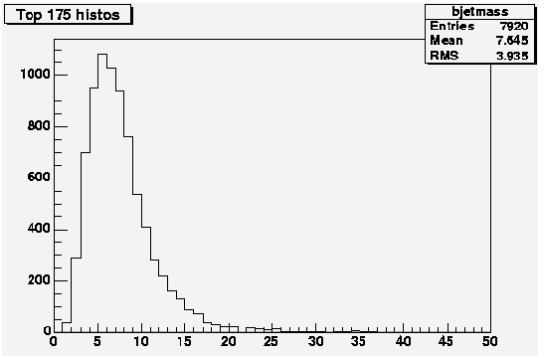
b masses in HERWIG and PYTHIA

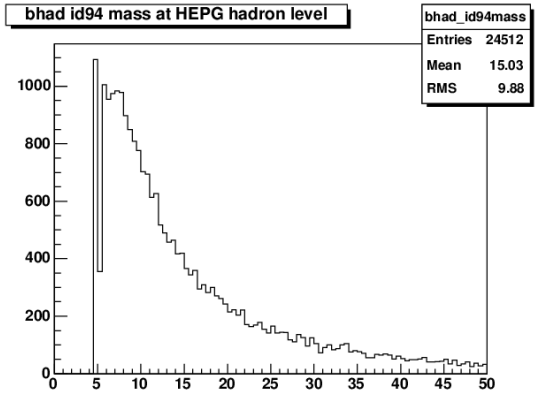
b parton-jet (ID=94)

b JETCLU mass include detector resolution

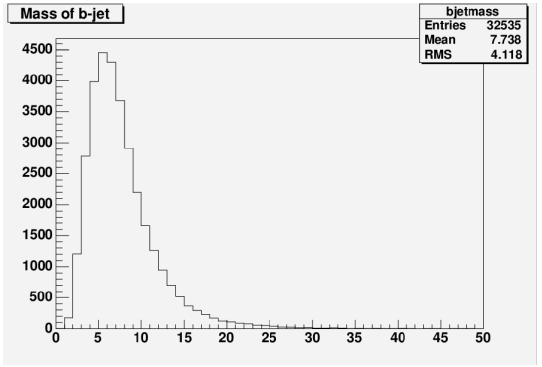


HERWIG



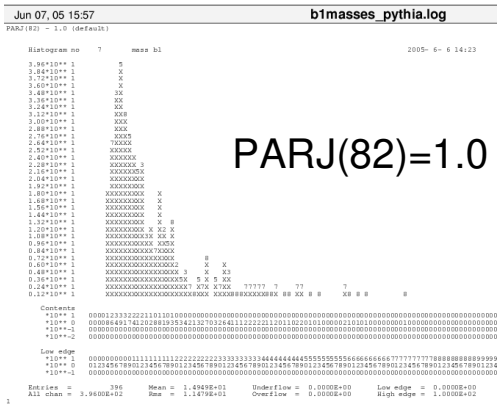


PYTHIA

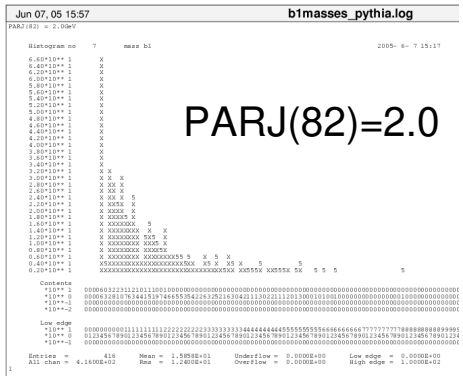


Jet mass for simulated jets is about the same, not so for ID=94 parton

PYTHIA b Mass varying PARJ(82)

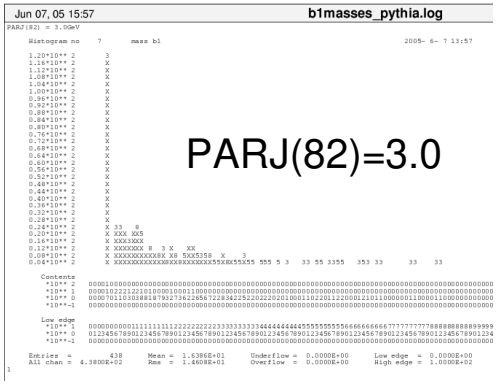


PARJ(82)=1.0

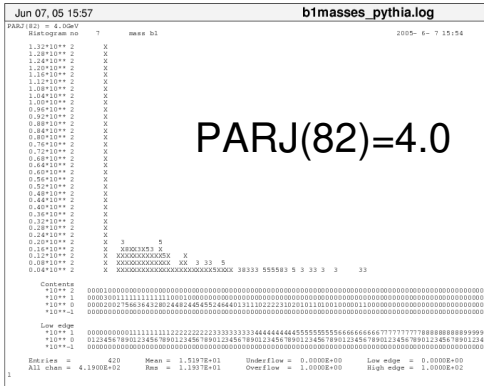


PARJ(82)=2.0

PYTHIA default
PARJ(82)=1.0
tuned on LEP data



PARJ(82)=3.0



PARJ(82)=4.0

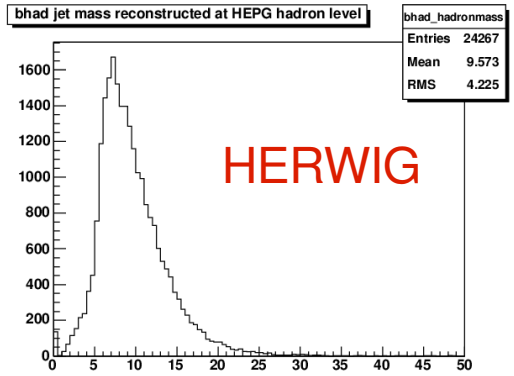
mass for
PARJ(82)=3-4
looks like the
HERWIG b mass.

Sjostrand and Mrenna point out that we can only make comparisons between the two MC at hadron level, i.e. after the parton shower and hadronization are complete (see next page)

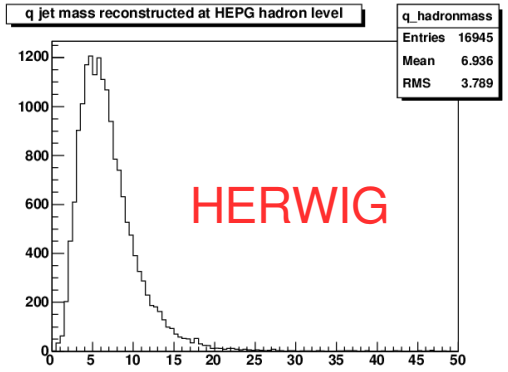
Jet masses at hadron level

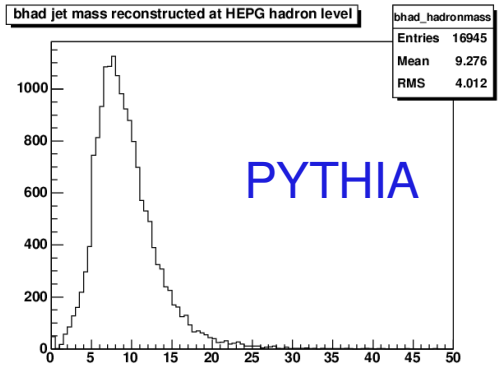
Use cone algorithm to find jets at particle level, compute the mass for jets with cone=0.4

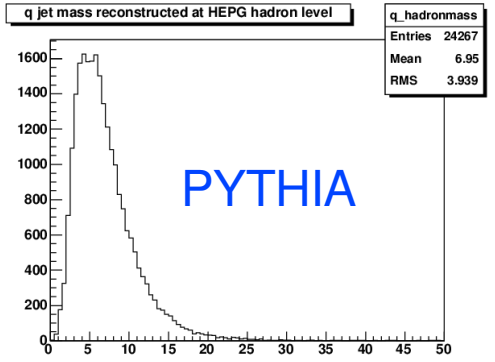
b jet mass Δm=0.5GeV



q jet mass Δm=0.01GeV







b jet mass in HERWIG is larger by 0.5 GeV