addition to dE/dx Babar vs fastsim discussion
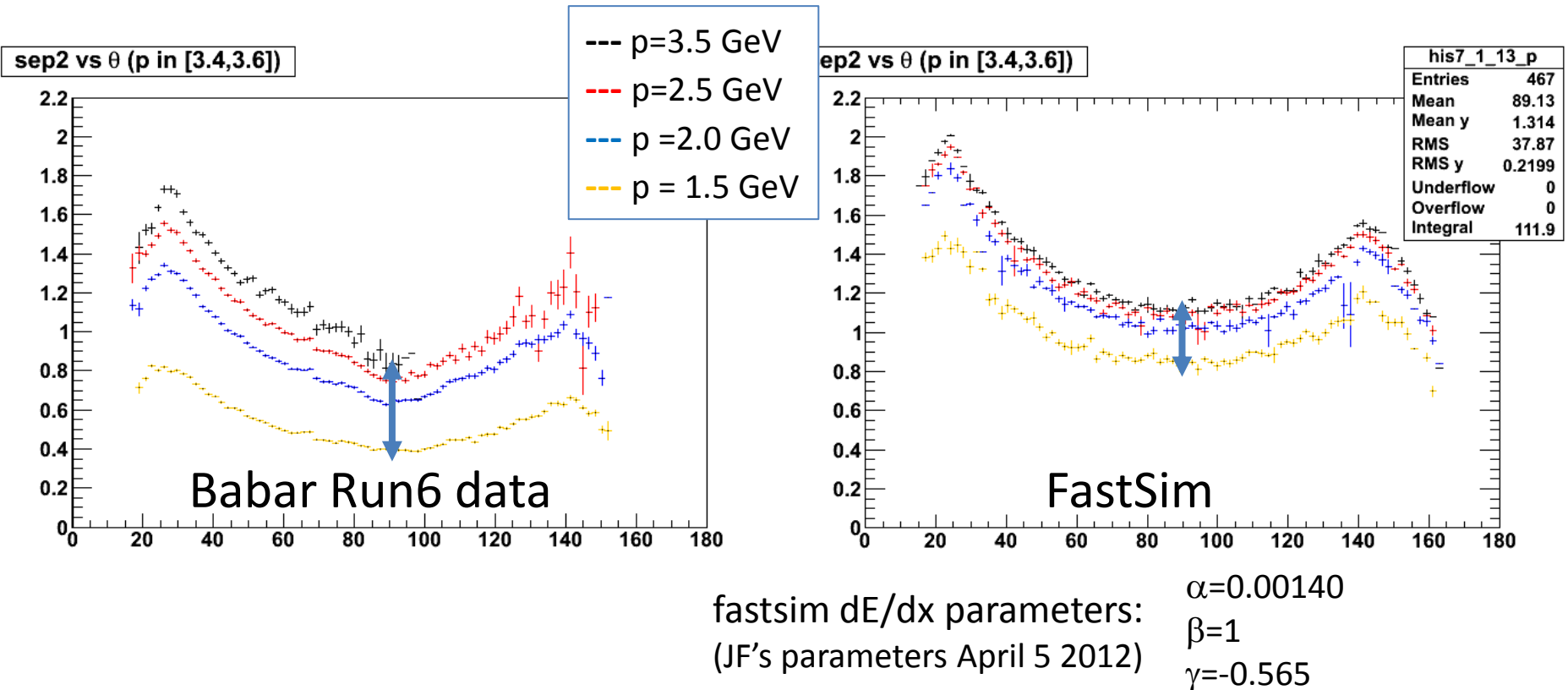
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5 April 2012

pi/K separation Babar vs fastsim

separation = |dEdx_expected(pion)-dEdx_expected(kaon)|/dEdx_error

--- p=3.5 GeV
--- p=2.5 GeV
--- p =2.0 GeV
--- p = 1.5 GeV

Babar Run6 data

FastSim

his7_1_13_p	
Entries	467
Mean	89.13
Mean y	1.314
RMS	37.87
RMS y	0.2199
Underflow	0
Overflow	0
Integral	111.9

fastsim dE/dx parameters:
(JF's parameters April 5 2012)

α=0.00140
β=1
γ=-0.565

Calibrating based on a specific p value (for example 3.5 GeV) does not give a satisfactory agreement in the other p regions

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pi/K separation vs fastsim

- discrepancy between Babar and fastsim pi/K separation probably dominated by different position of no-separation point
  - ➔ in this situation a precise calibration of the dE/dx fastsim parameters is not useful
  - – just a reasonable choice of the parameters is enough

- **Alternative approach:**
  - – try to translate the measured value of dE/dx(p) in fastsim by $\Delta p \sim 250$ MeV to match the point of no K/pi separation with the one measured in Babar
  - – tune the dE/dx error parameters after the shift
- It may be worth a try

(dE/dx_pi-dE/dx_K)/dedxErr vs pdch θ=90deg

babar data

(dE/dx_pi-dE/dx_K)/dedxErr vs pdch θ=90deg

his8_3_p	
Entries	1473
Mean	2.229
Mean y	0.9052
RMS	1.055
RMS y	0.571
Underflow	0
Overflow	0.9101
Integral	88.85

fastsim