Dipole update 03/21/01 J. Thom

Time dep. vertex efficiency function $\varepsilon(t)$

$$\varepsilon(t) = \frac{\#\,b \text{ survived dipole cuts}}{\#\,b \text{ in any hemisphere}}$$

current analysis: 4 $\varepsilon(t)$ functions (4 b-types)

example (2000 $b\bar{b}$, overlap removed)

B_d: $\varepsilon(t) = 0.11 \dfrac{1-e^{-4.6t}}{1+e^{-4.6t}} + 0.015\,t - 0.0018\,t^2$

B_s: $\varepsilon(t) = 0.11 \dfrac{1-e^{-4.8t}}{1+e^{-4.8t}} + 0.015\,t - 0.0017\,t^2$

different for decay topologies?

#b : 1	#d : 1	
n	1	
1	n	$n > 1$
n	n	

study 2001 $b\bar{b}$ MC

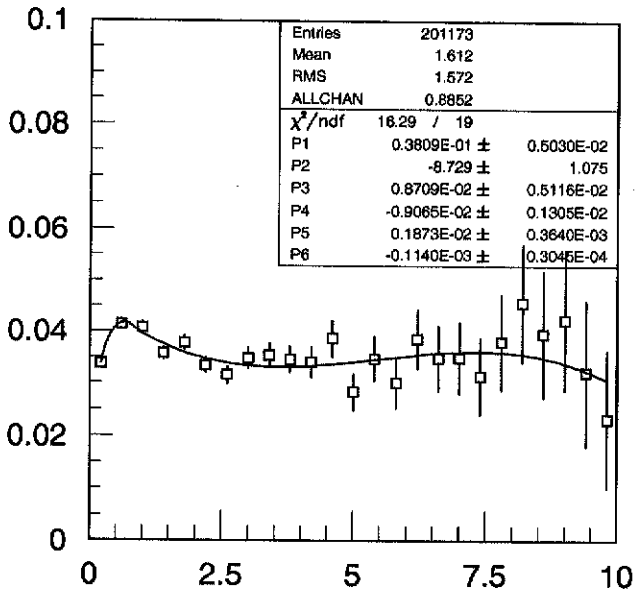
(trk eff. corr., no overlap removed
new trk selection, new cuts)

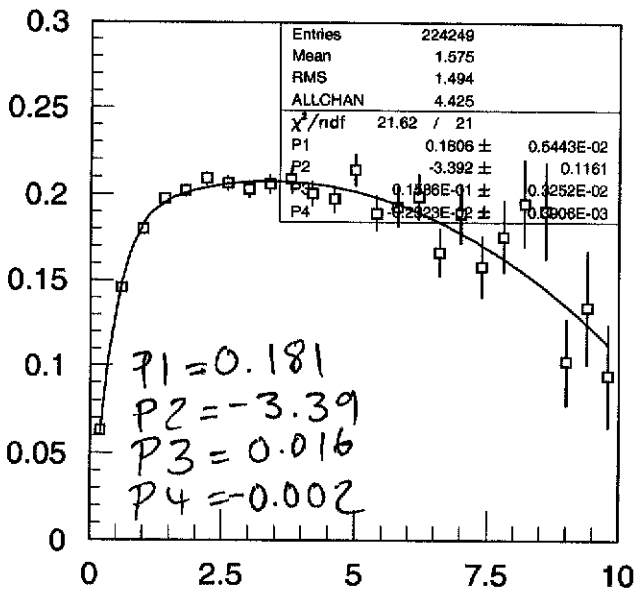
98 spr bb

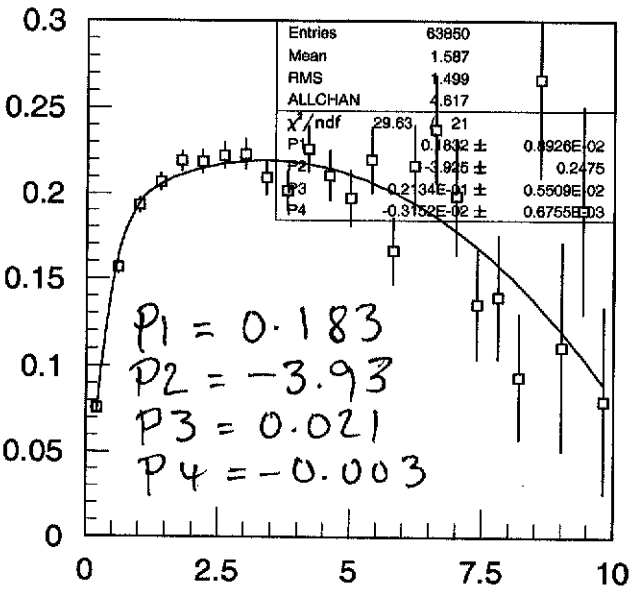
b 3 man tracks
new cuts
new b selection
b vertex efficiency function

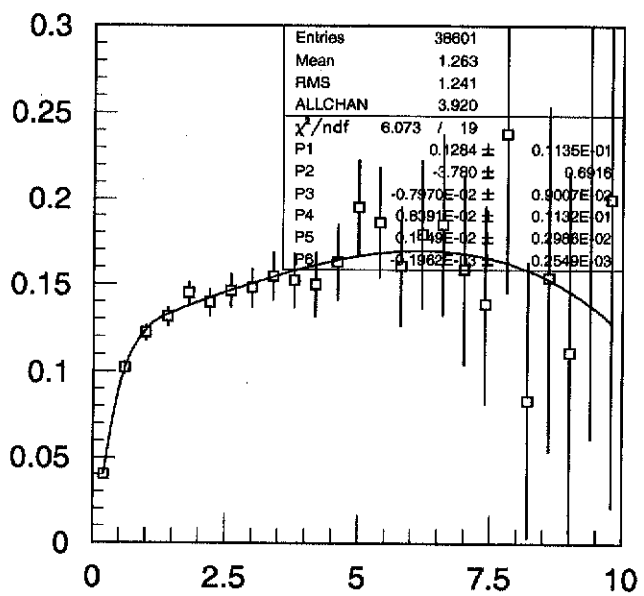
"bbktop" for trk. eff. corr.

01/03/20 23.35









$$\varepsilon_4(t) = P1\,\frac{1-e^{P2\cdot t}}{1+e^{P2\cdot t}} + P3\cdot t + P4\cdot t^2$$

$$\varepsilon_6(t) = P1\,\frac{1-e^{P2\cdot t}}{1+e^{P2\cdot t}} + P3\cdot t + P4\cdot t^2 + P5 + P6\cdot t^3$$

B_s vtx eff. fct. per topology :

(n > 1)

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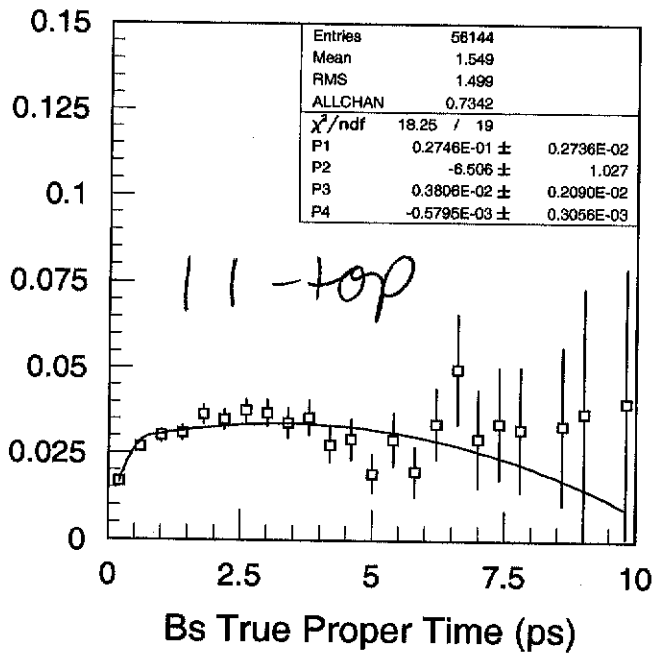

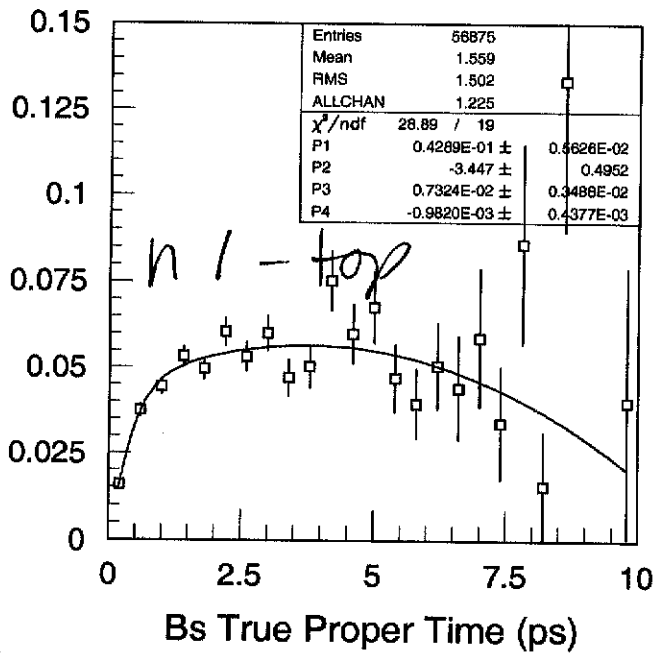

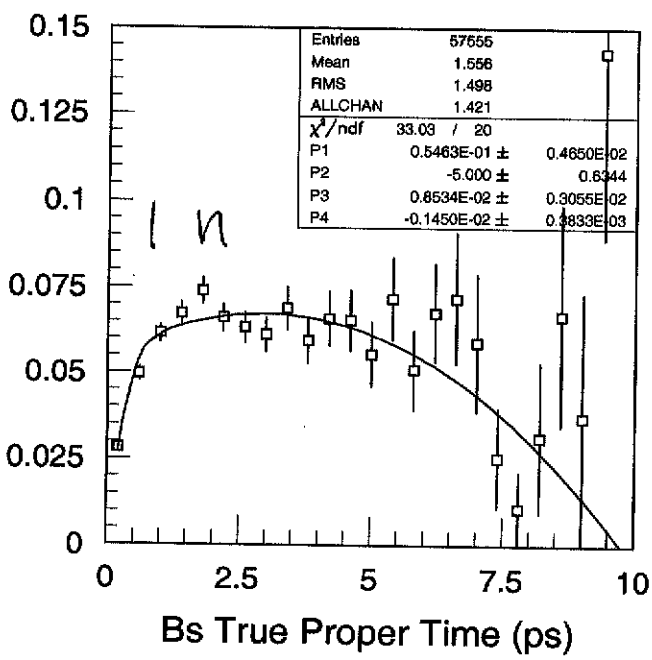

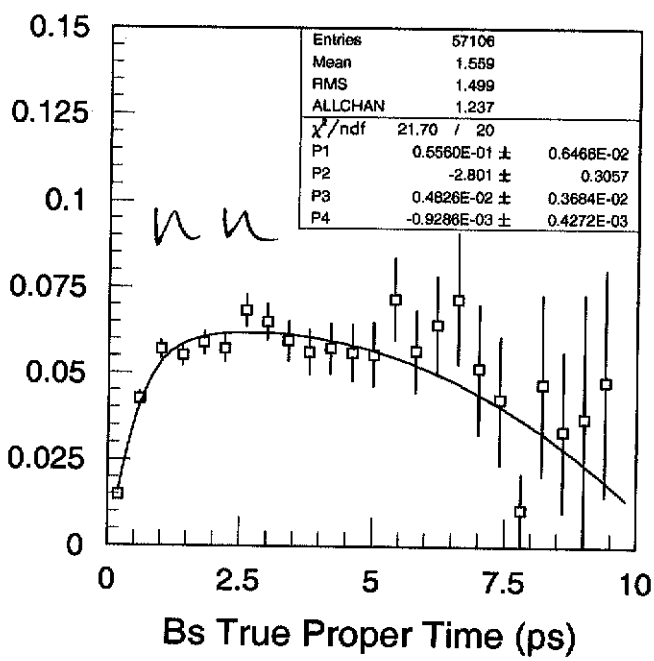

B_d per topology

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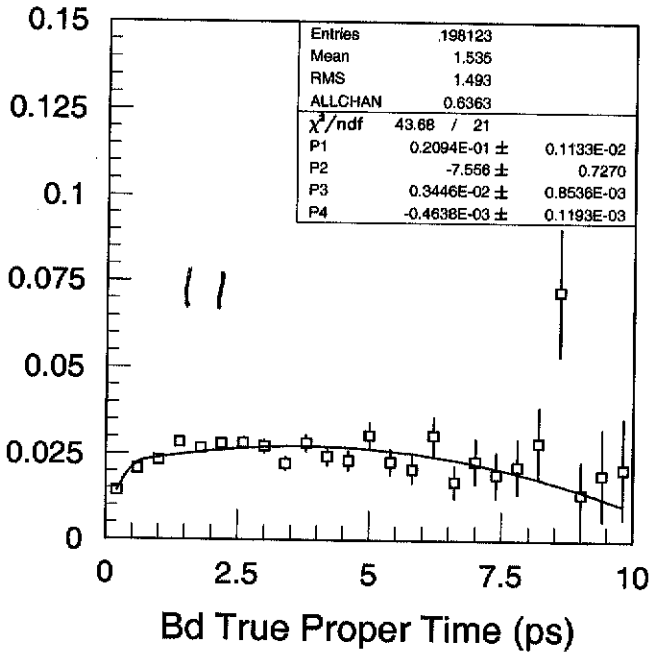

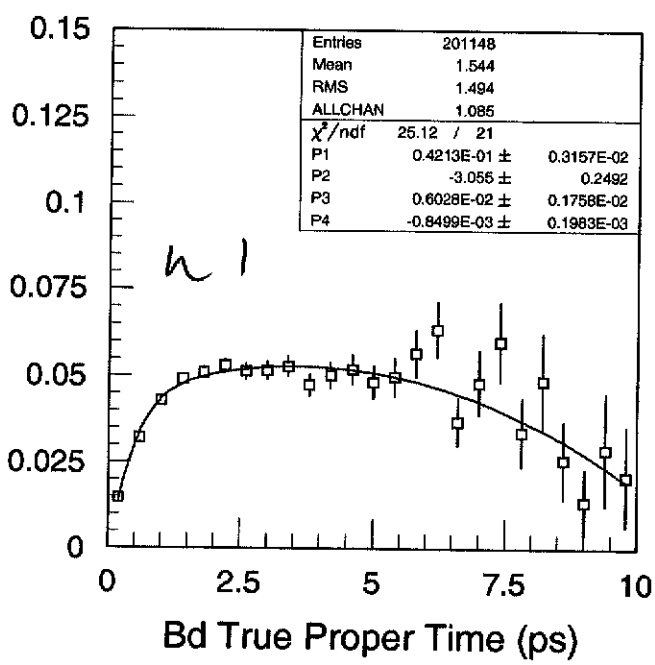

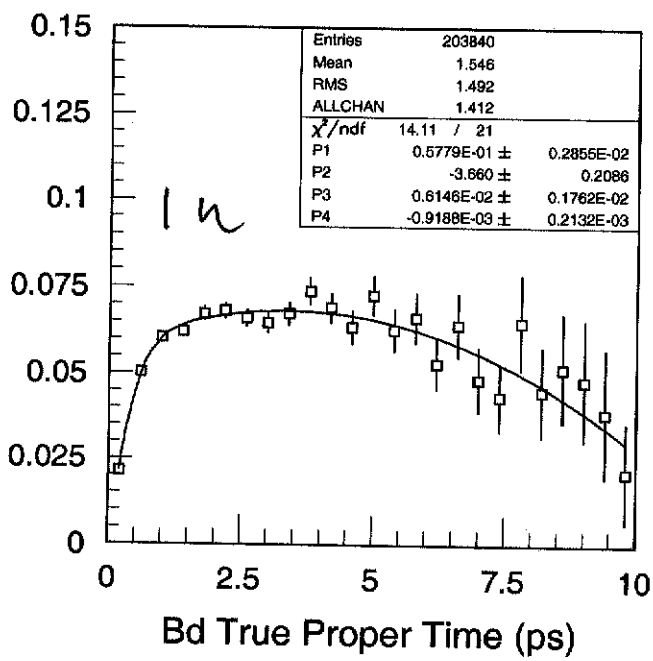

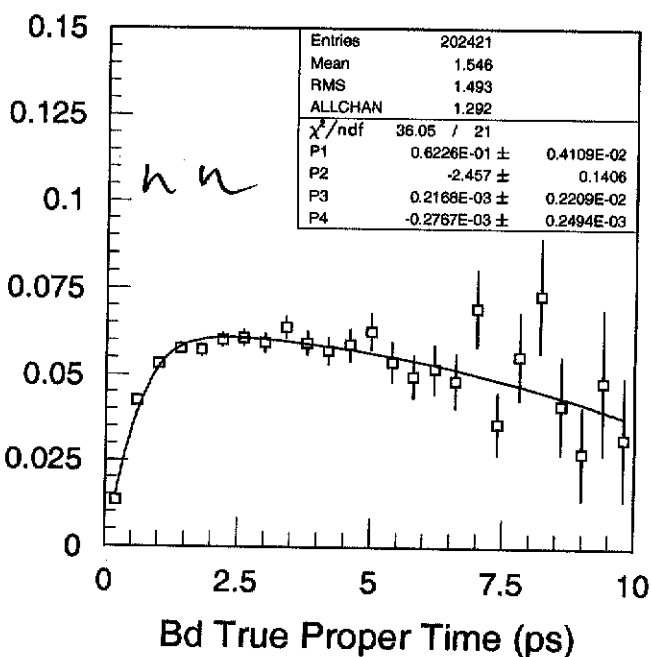

note: B_s B_d very similar (B_s: slightly higher ll eff.)

best eff.: lh decays

new trk selection & cuts:
much higher efficiency