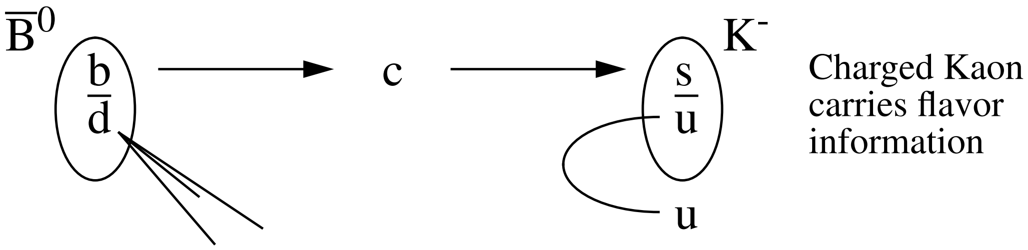
KAON FINAL STATE TAG



- Exploits the dominant quark transition:

$$\left(\bar{B}^0\right) b \longrightarrow c \longrightarrow s \left(K^-\right)$$

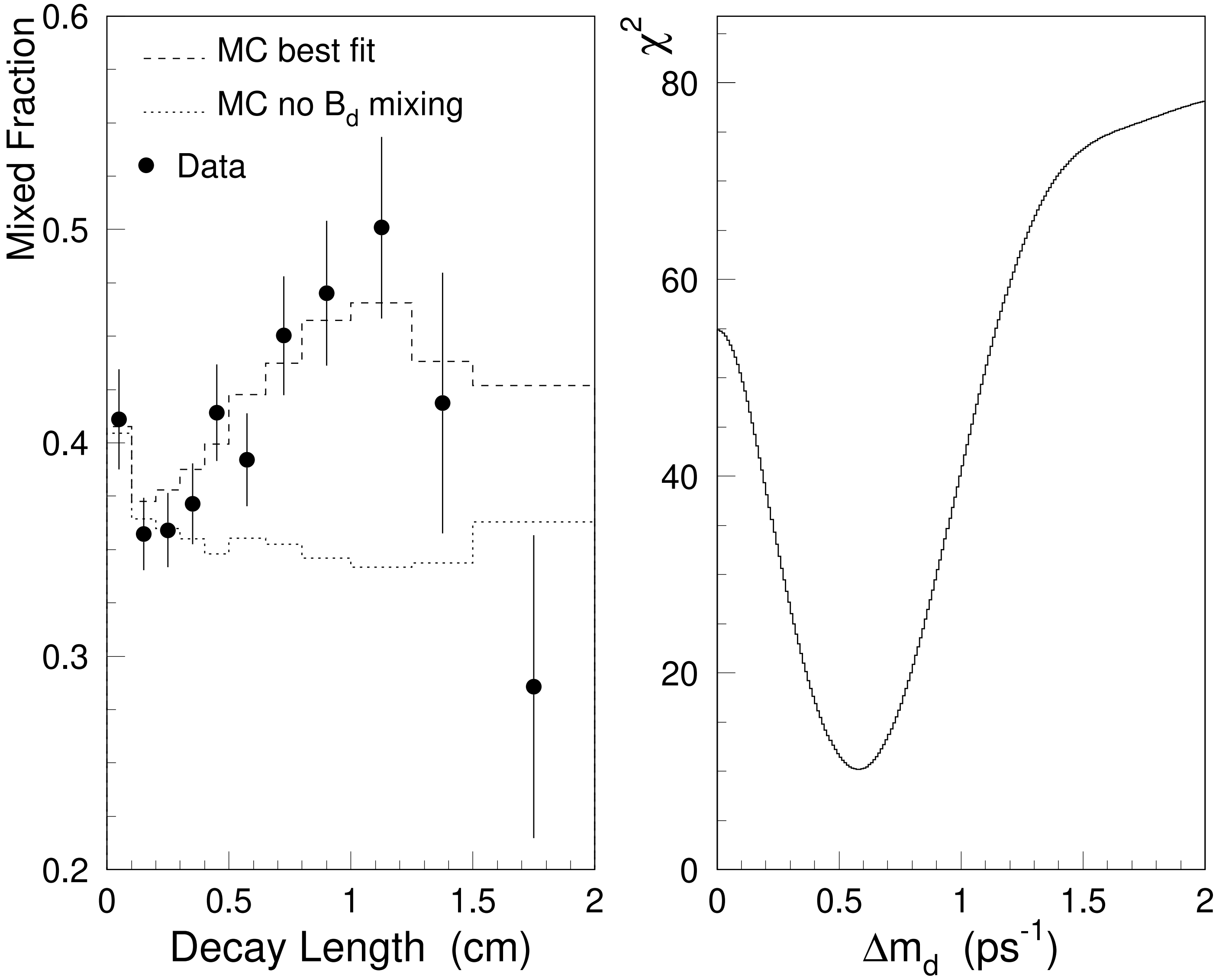
- Use SLD CRID:
  - Uses both liquid and gas radiators ($p > 0.8$ GeV/c)
  - π-K mis-ID is calibrated using K_S^0 and τ decays in the data
- Charge sum of K's in the vertex tags the $B^0/\bar{B}^0$ decay
- Selects 5694 B decays

$\Rightarrow$ Tag efficiency (after vertexing): 33%

$\Rightarrow$ Correct tag probability: 77%

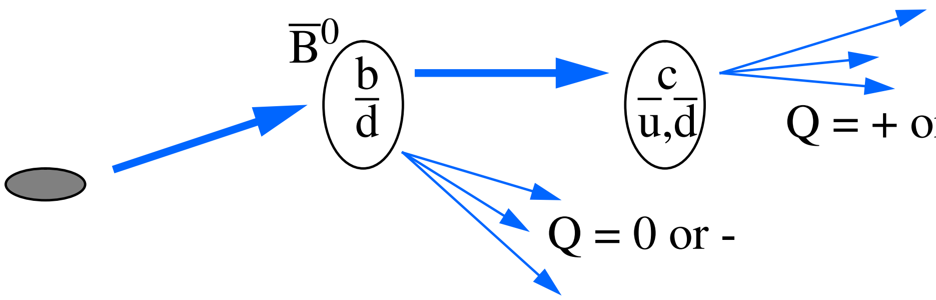
KAON FINAL STATE TAG

Fit Results



CHARGE DIPOLE FINAL STATE TAG

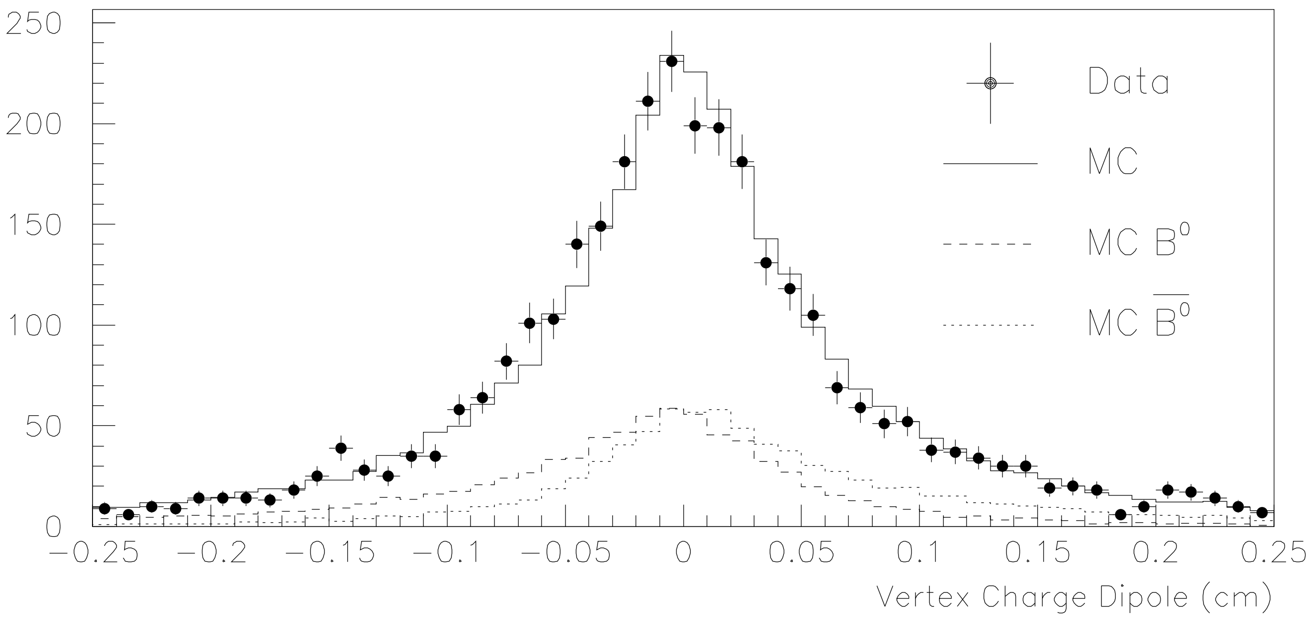
- Exploit the B→D cascade charge structure



- Charge Dipole:

$$\delta q = \frac{\Sigma^+ w_i L_i}{\Sigma^+ w_i} - \frac{\Sigma^- w_i L_i}{\Sigma^- w_i}$$

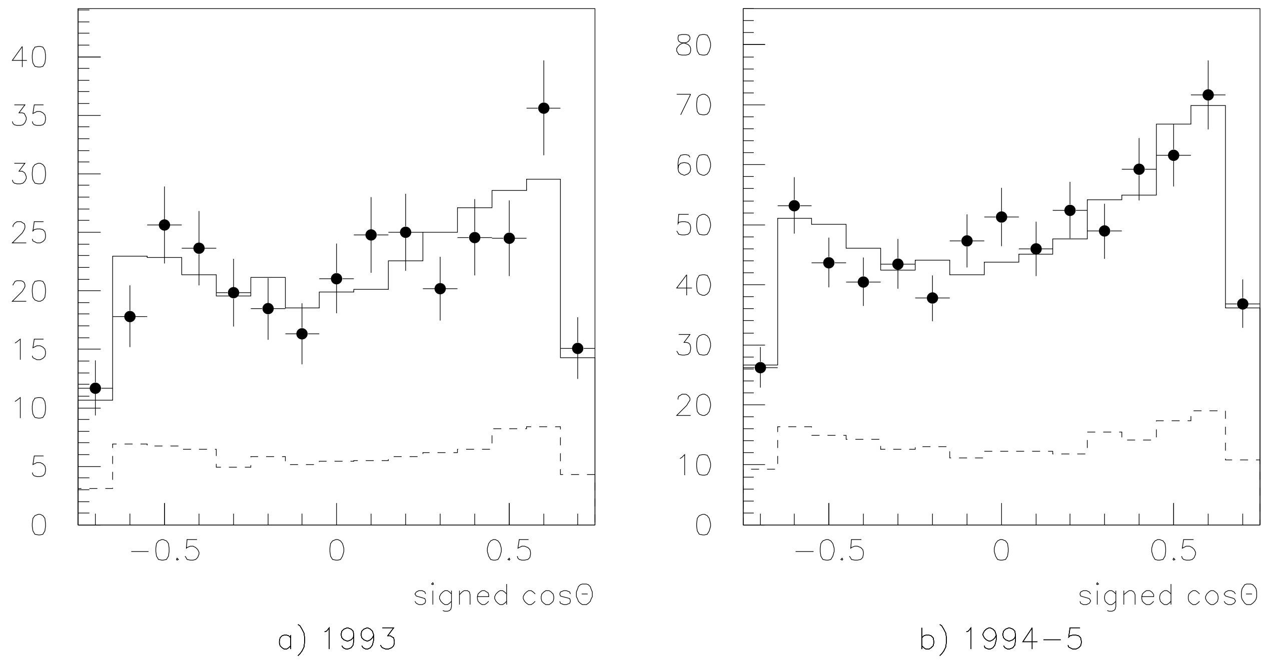
$$(w_i = \sin^2\theta/\delta T_i)$$



$\Rightarrow$ Correct tag probability increases with δq up to 84%

CHARGE DIPOLE TEST

- Select Charged B decay vertices
- Use e^- beam polarization and charge dipole to sign Forward-Backward asymmetry:



- No Asymmetry if charge dipole tag were random

CHARGE DIPOLE FINAL STATE TAG

Fit Results