

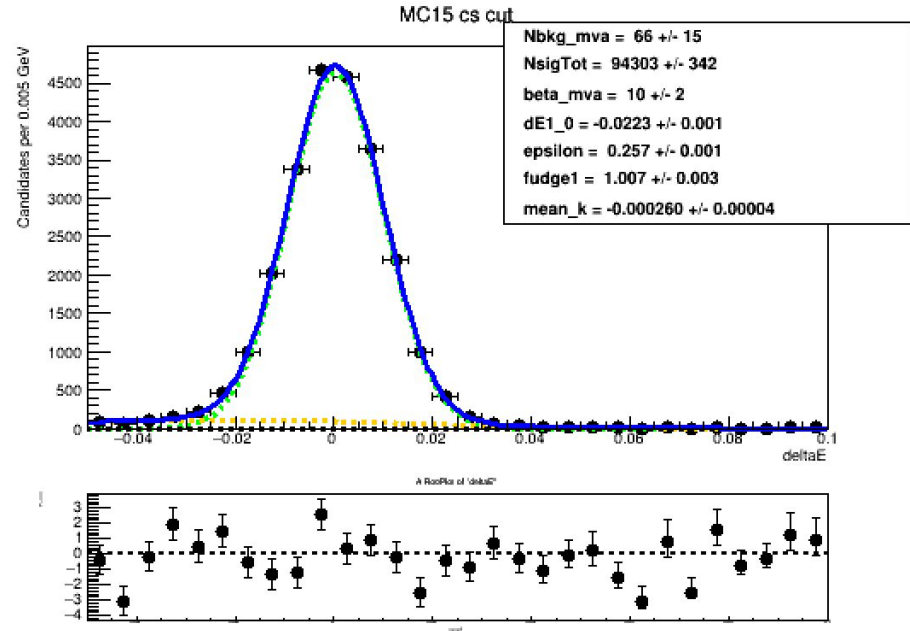
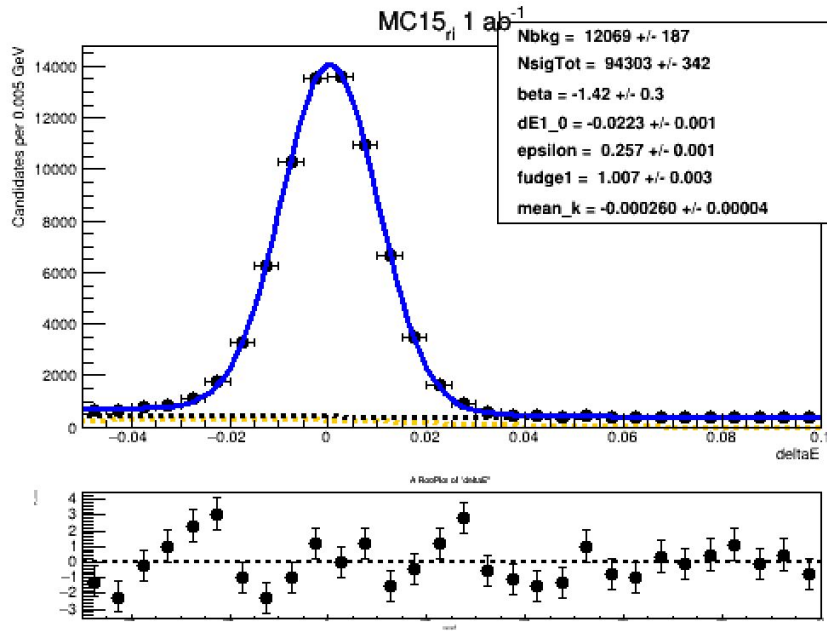


Update $\mathcal{B}(B \rightarrow D^0 \rho)$

TS analysis meeting
September 30, 2022

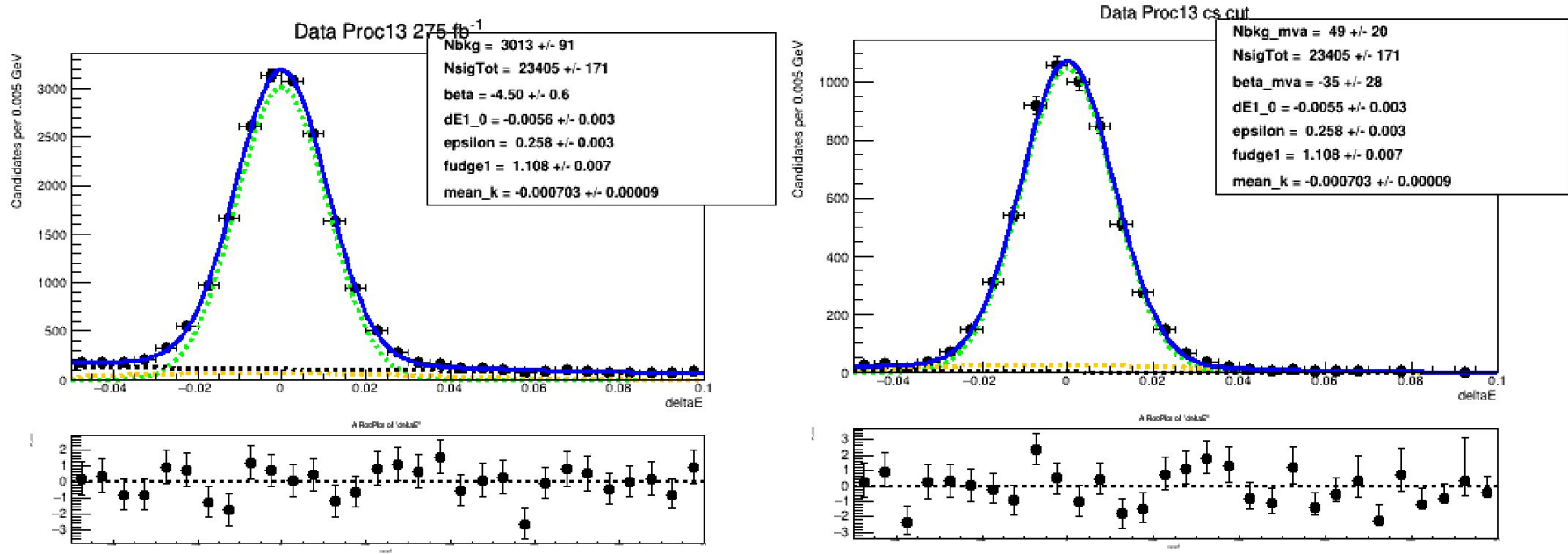
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Simultaneous Fit result for MC15 1 ab⁻¹



$$\epsilon_{MC} = 0.257 \pm 0.001$$

Simultaneous Fit result for Data Proc13 275 fb⁻¹



$$\epsilon_{Data} = 0.258 \pm 0.003$$



Continuum suppression efficiency

$$\frac{\epsilon_{Data}}{\epsilon_{MC}} = \frac{0.258 \pm 0.003}{0.257 \pm 0.001} = 1.004 \pm 0.012$$

is counted as systematic
uncertainty of CSMVA cut

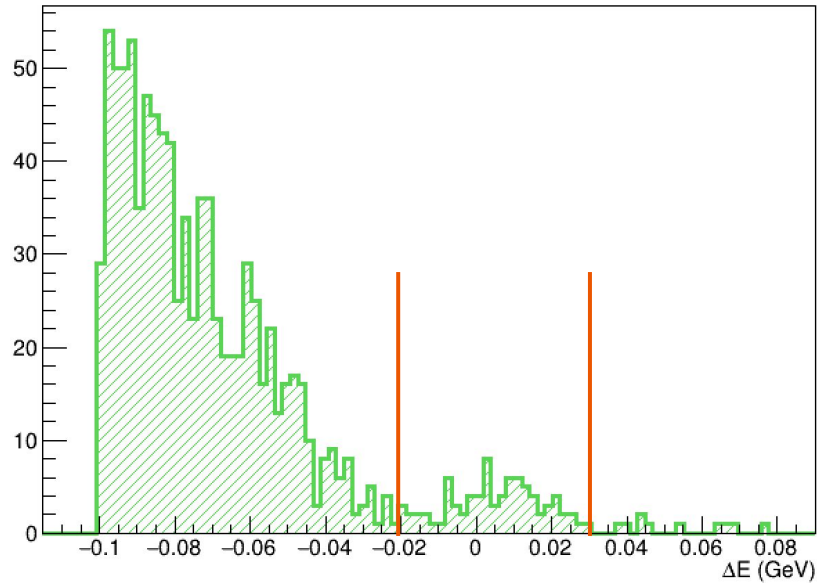


Backup

BB-bar background “bump” composition



$-0.02 < \Delta E < 0.03 \text{ GeV}$



$$J/\Psi K \sim 20\%$$

$$D^0 \pi / l \sim 24\%$$

$$D^0 K / \pi / l \sim 16\%$$

Efficiency before CSMVA > 0.98 cut


$$BF = \frac{N_{\text{signal}}}{L \cdot \epsilon \cdot \epsilon_{K\pi}} \implies \epsilon = \frac{N_{\text{signal}}}{BF_{PDG} \cdot L \cdot \epsilon_{K\pi}} = 34.9\%$$

Efficiency of CSMVA > 0.98 cut

$$\epsilon_{CSMVA} = \frac{N_{sigCSMVA}}{N_{sig}} = 0.343 \pm 0.003$$