

Fourth control channel

1.0 M dedicated signal MC

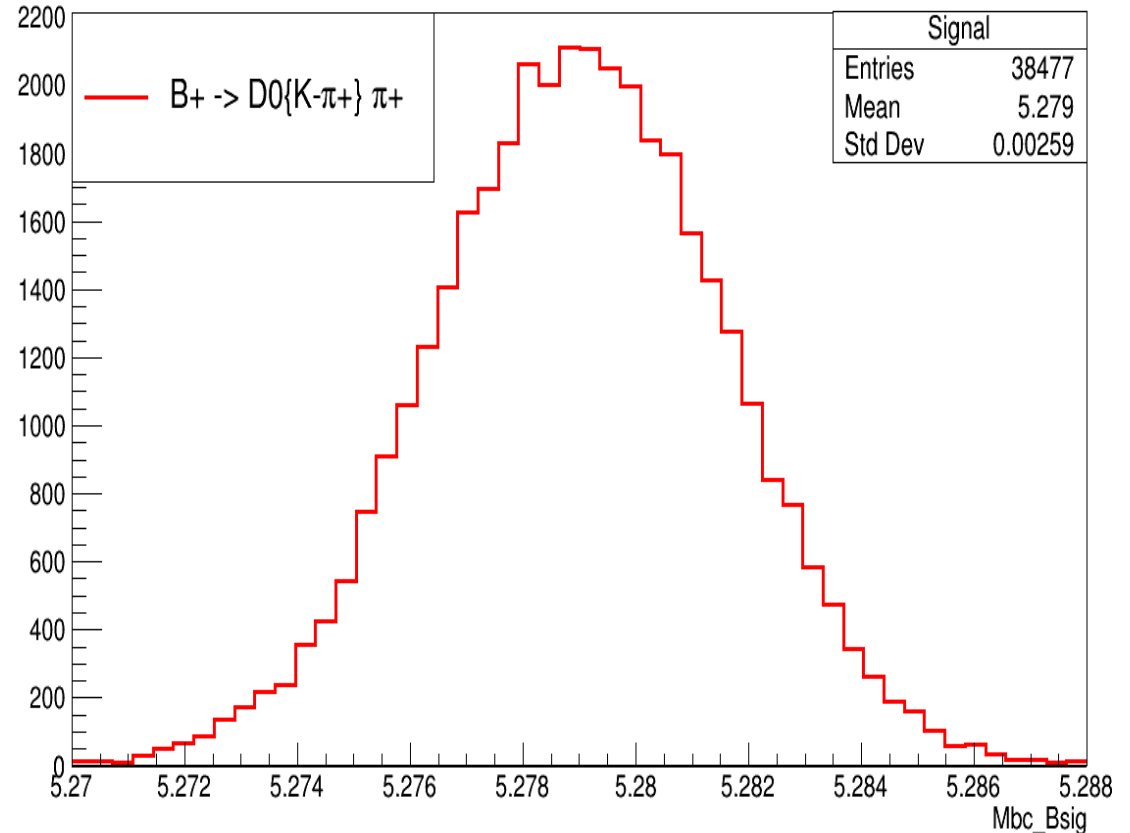
$$\begin{array}{l} B^+ \rightarrow \bar{D}^0 \pi^+ \quad 4.61 \times 10^{-3} \\ \bar{D}^0 \rightarrow k^- \pi^+ \quad 3.947 \% \end{array}$$

29 April 2024

Mbc

Cuts applied

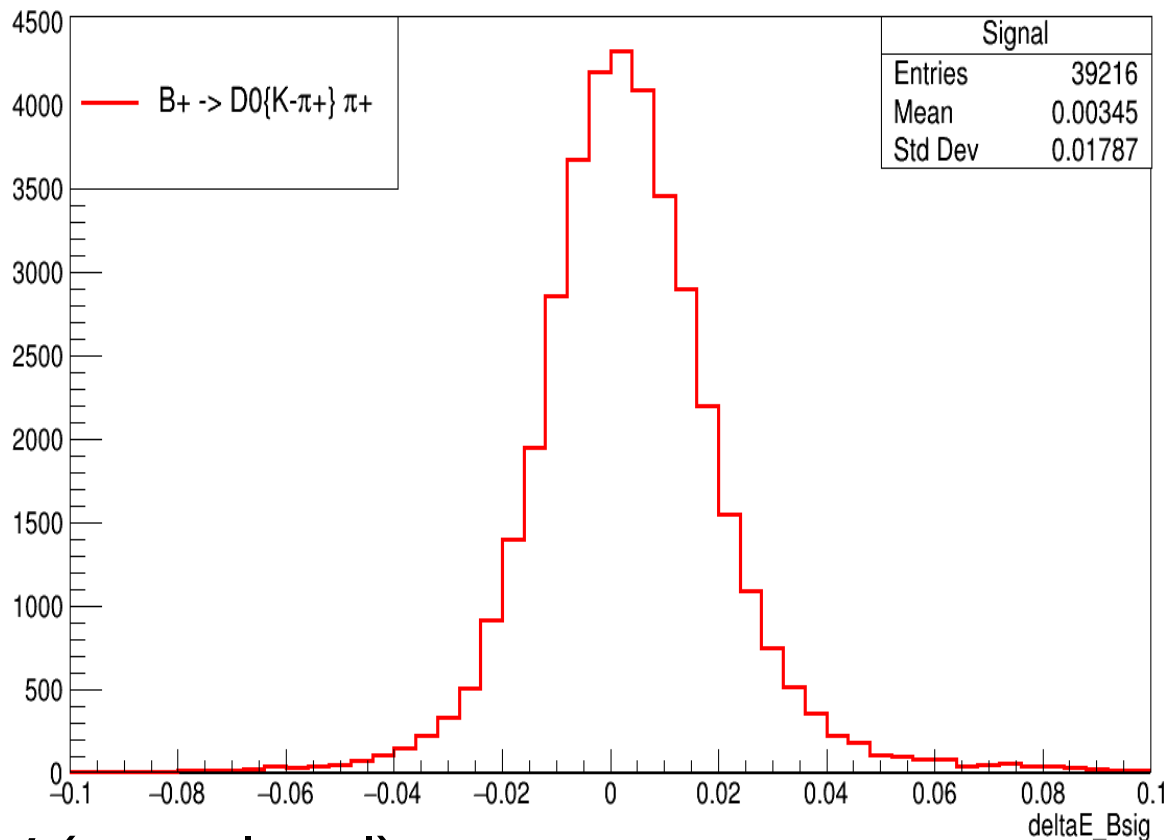
- Rank 1
- $-0.050 < \Delta E < 0.050$
- $\text{abs}(\sin_phi) < 1.1$
- $1.3 < m_{\text{hadROE}} < 5.3 \text{ GeV (reco. level)}$



ΔE

Cuts applied

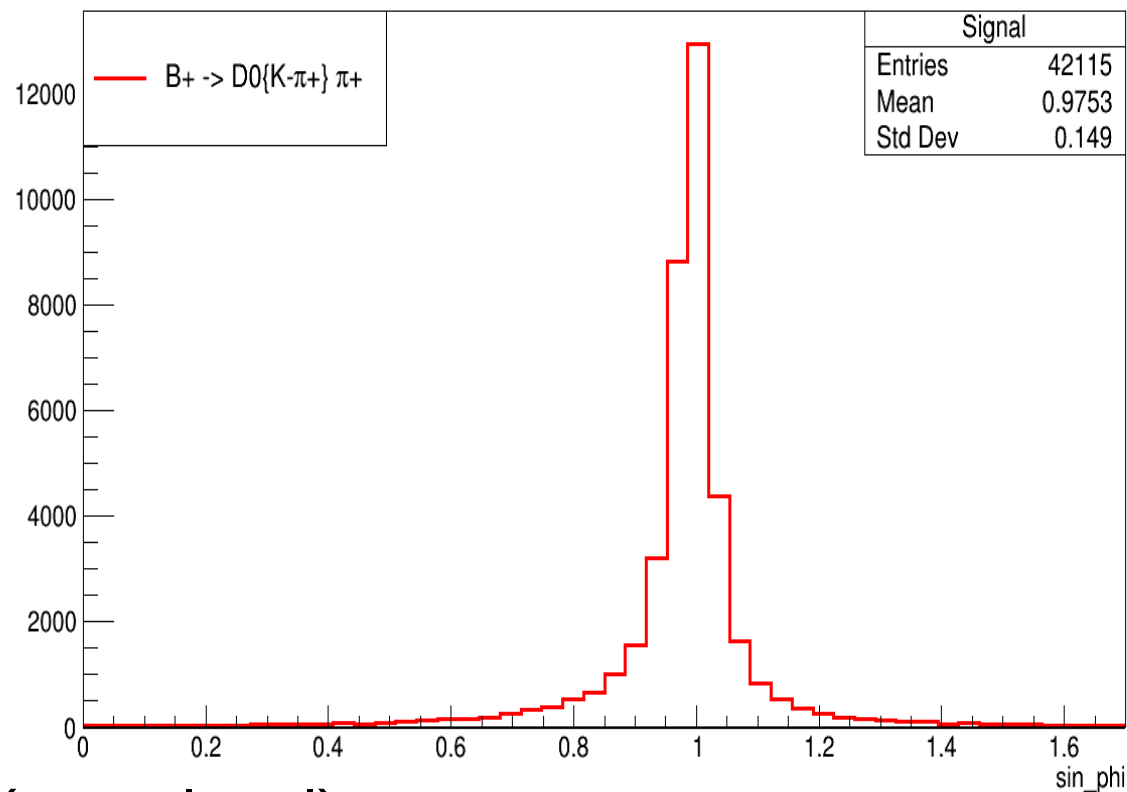
- Rank 1
- $M_{bc} > 5.27$
- $\text{abs}(\sin_{\text{phi}}) < 1.1$
- $1.3 < m_{\text{hadROE}} < 5.3 \text{ GeV (reco. level)}$



Sin_phi

Cuts applied

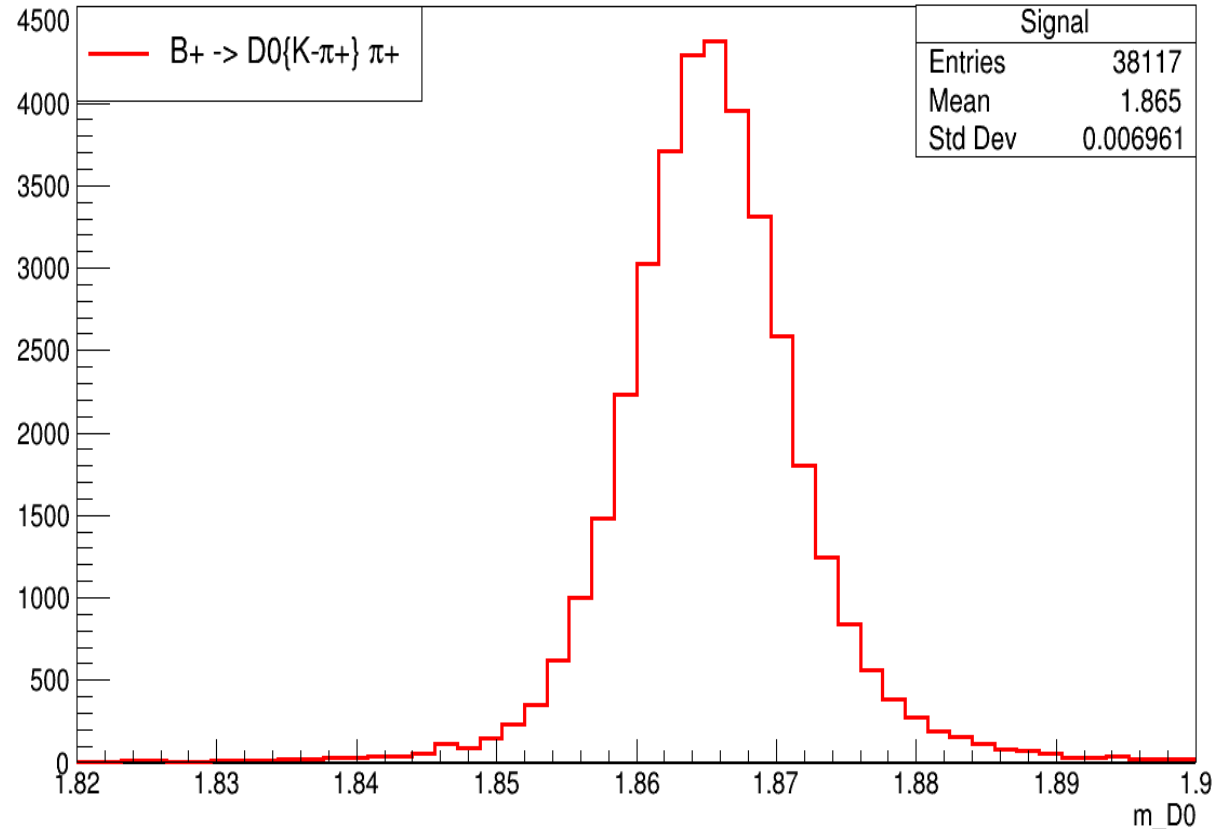
- Rank 1
- $M_{bc} > 5.27$
- $-0.050 < \Delta E < 0.050$
- $1.3 < m_{\text{hadROE}} < 5.3 \text{ GeV (reco. level)}$



$m_{\bar{D}^0}$

Cuts applied

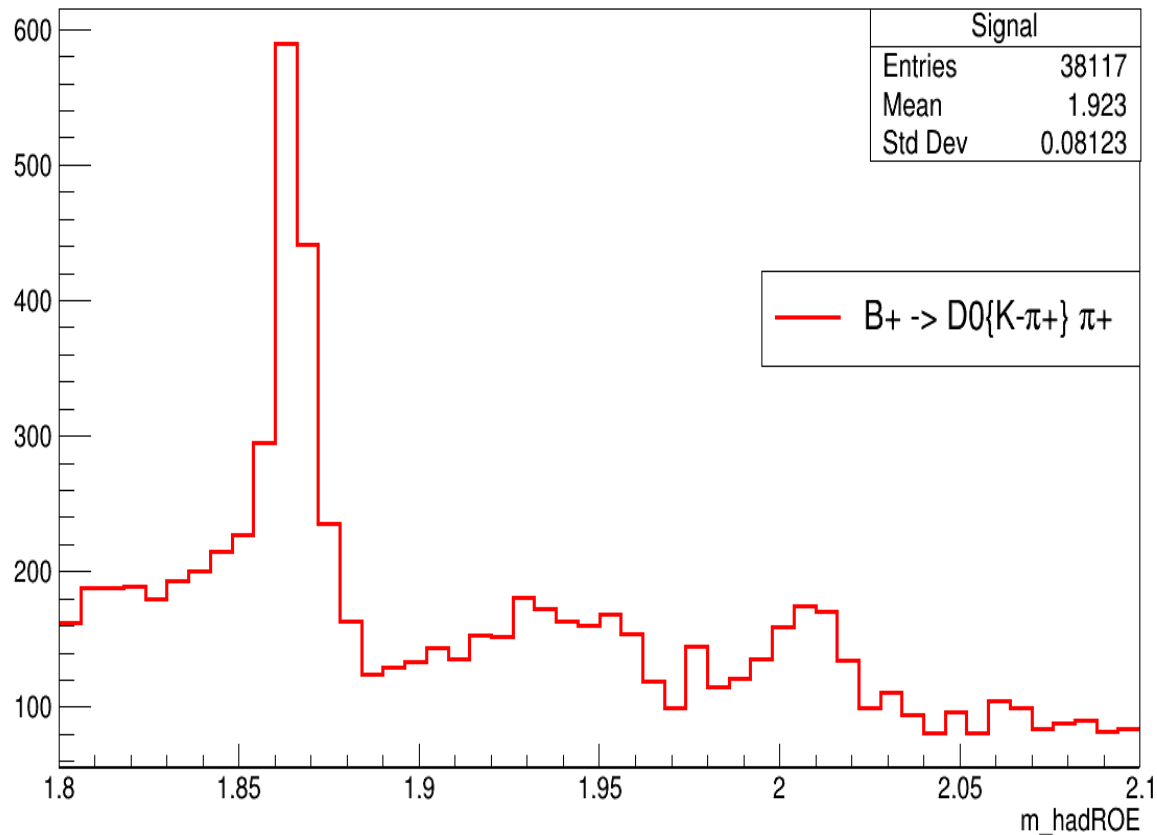
- Rank 1
- $M_{bc} > 5.27$
- $-0.050 < \Delta E < 0.050$
- $\text{abs}(\sin_{\phi}) < 1.1$
- $1.3 < m_{\text{hadROE}} < 5.3 \text{ GeV (reco. level)}$



m_hadROE

Cuts applied

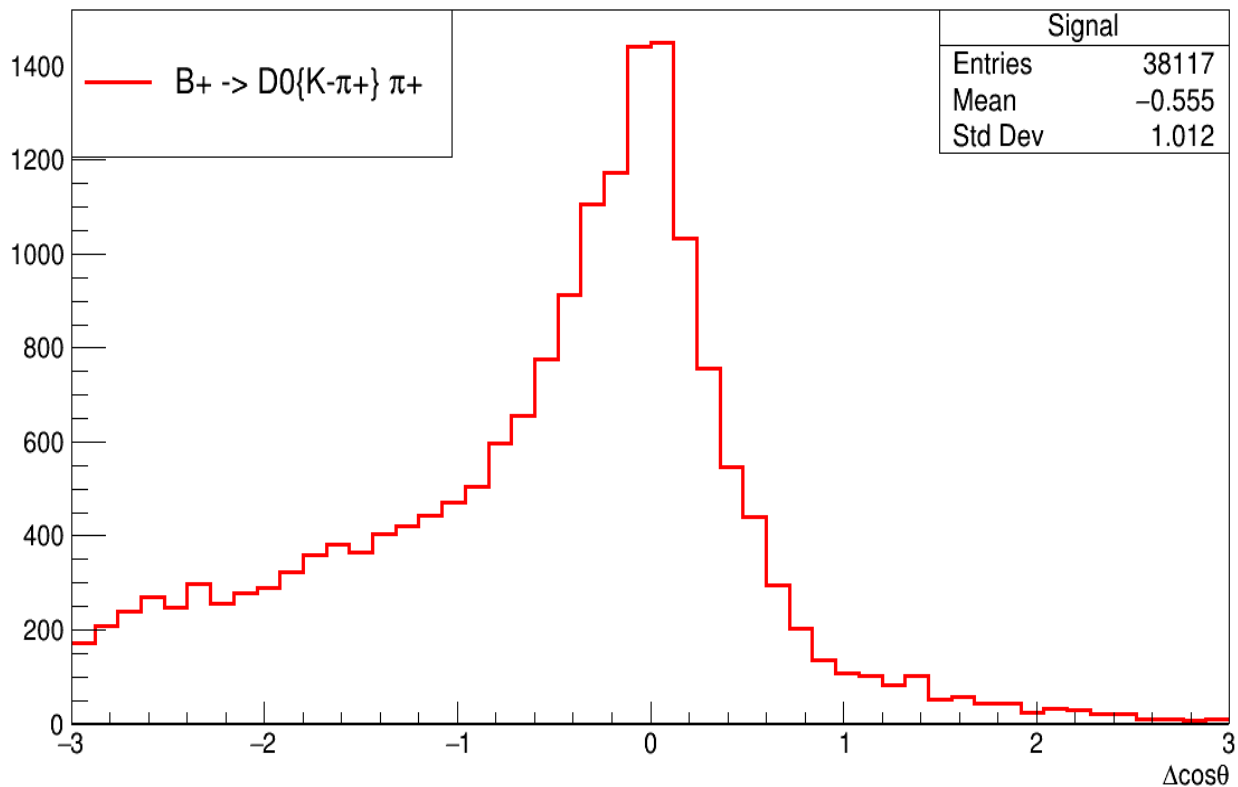
- Rank 1
- $M_{bc} > 5.27$
- $-0.050 < \Delta E < 0.050$
- $\text{abs}(\sin_{\phi}) < 1.1$
- $1.3 < m_{\text{hadROE}} < 5.3 \text{ GeV (reco. level)}$



Best sum of cosine angles

Cuts applied

- Rank 1
- $M_{bc} > 5.27$
- $-0.050 < \Delta E < 0.050$
- $\text{abs}(\sin_{\text{phi}}) < 1.1$
- $1.3 < m_{\text{hadROE}} < 5.3 \text{ GeV (reco. level)}$

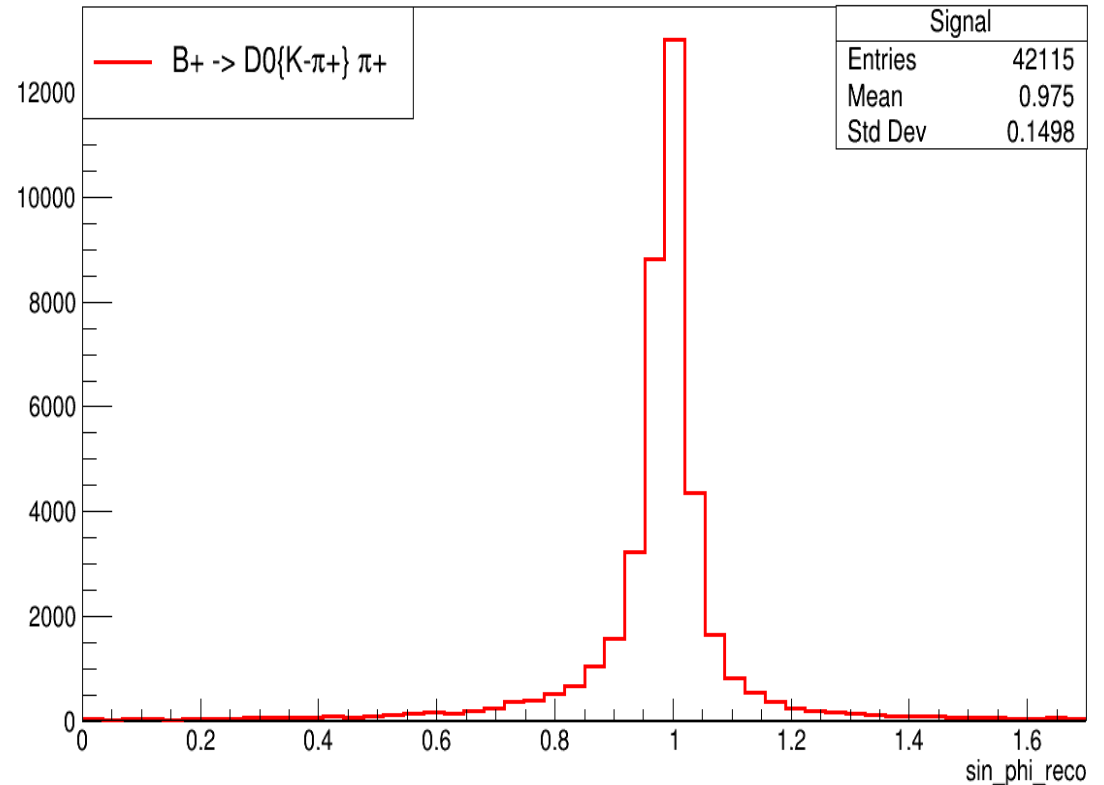


Back up

Sin_phi_reco

Cuts applied

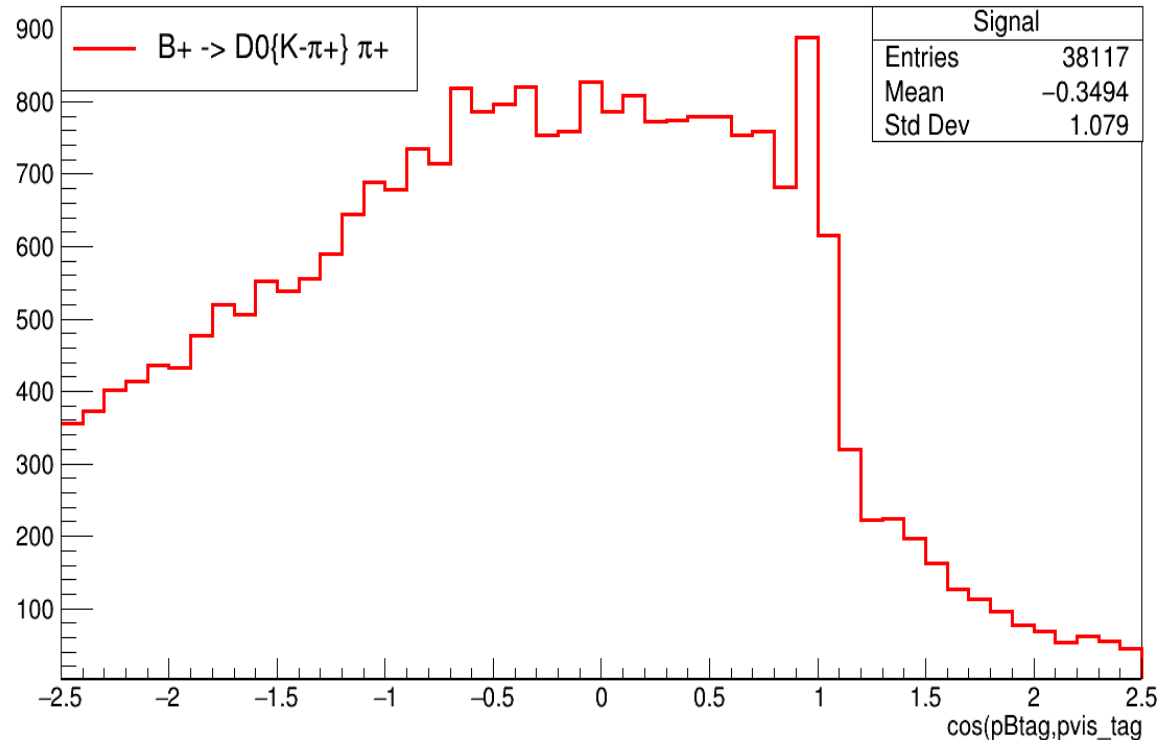
- Rank 1
- $M_{bc} > 5.27$
- $-0.050 < \Delta E < 0.050$
- $1.3 < m_{\text{hadROE}} < 5.3 \text{ GeV (reco. level)}$



$\cos(\rho_{B\text{tag}}, \rho_{\text{vis}\text{tag}})$

Cuts applied

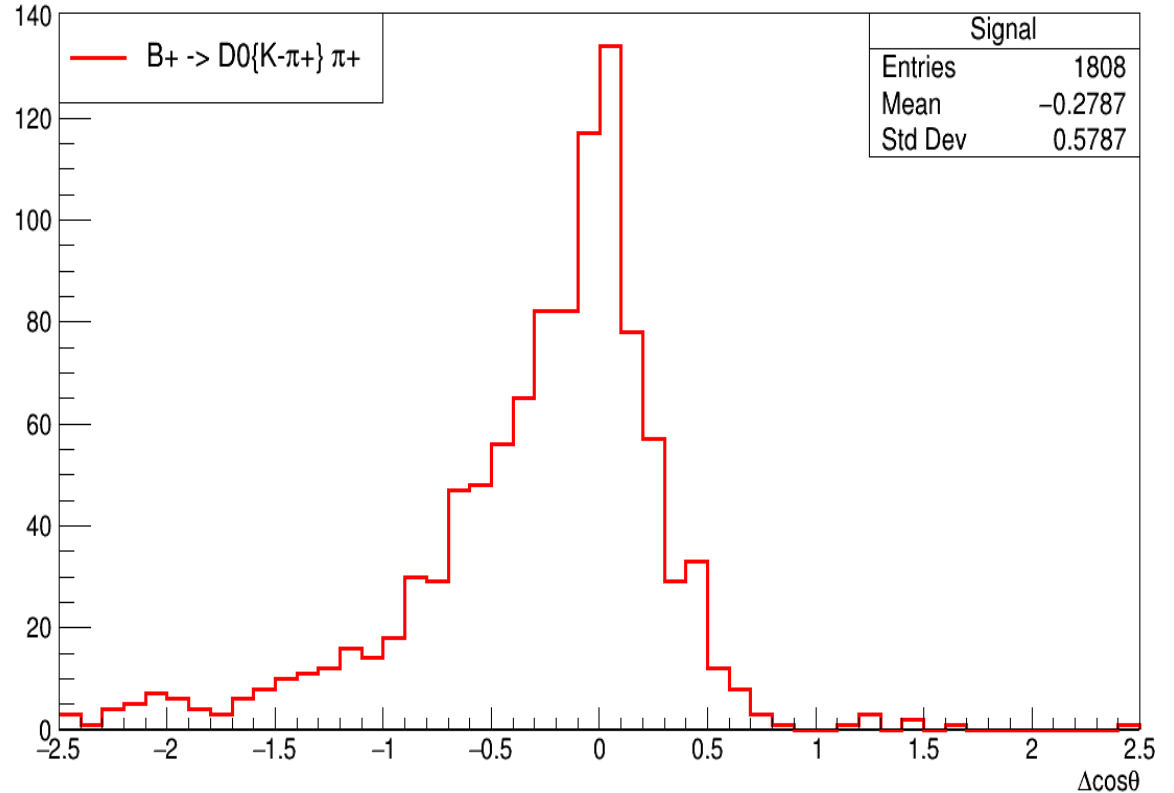
- Rank 1
- $M_{bc} > 5.27$
- $-0.050 < \Delta E < 0.050$
- $\text{abs}(\sin_{\text{phi}}) < 1.1$
- $1.3 < m_{\text{hadROE}} < 5.3 \text{ GeV}$ (reco. level)



Best sum around D0

Cuts applied

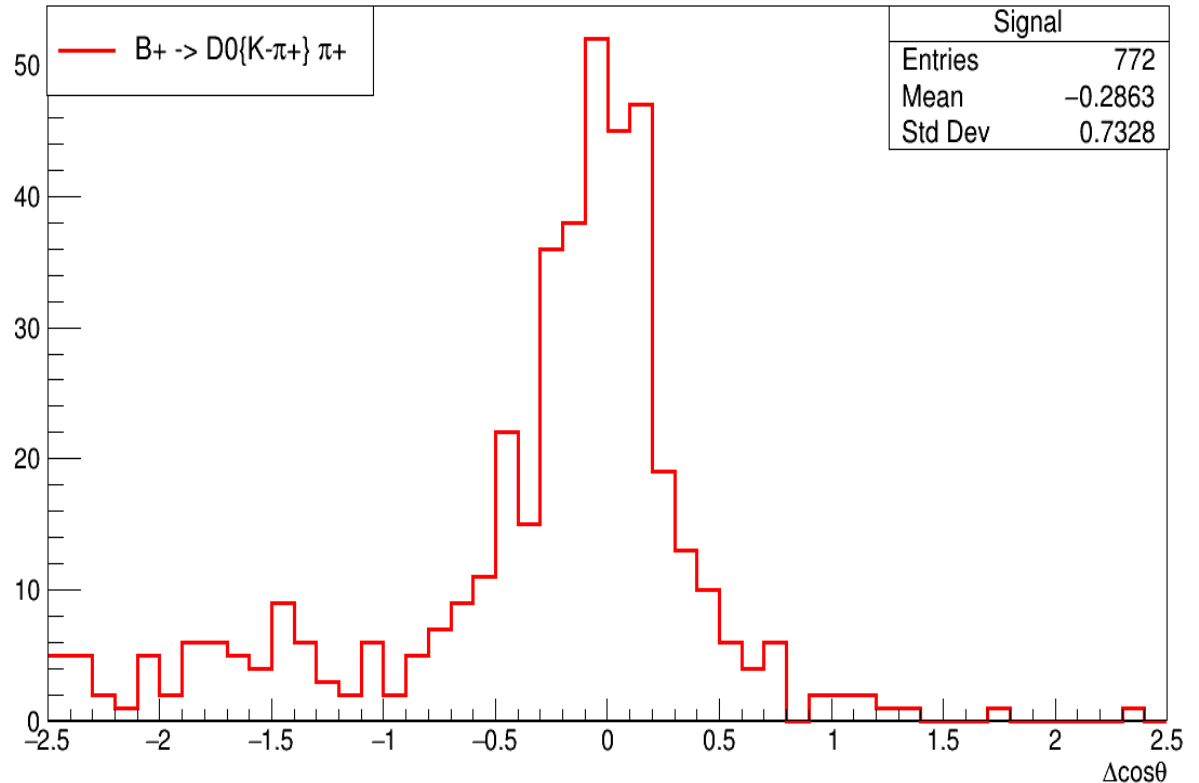
- Rank 1
- $M_{bc} > 5.27$
- $-0.050 < \Delta E < 0.050$
- $\text{abs}(\sin_phi) < 1.1$
- $\text{abs}(m_{\text{hadROE}} - 1.86) < 0.015$
- $1.3 < m_{\text{hadROE}} < 5.3 \text{ GeV (reco. level)}$



Best sum around D*

Cuts applied

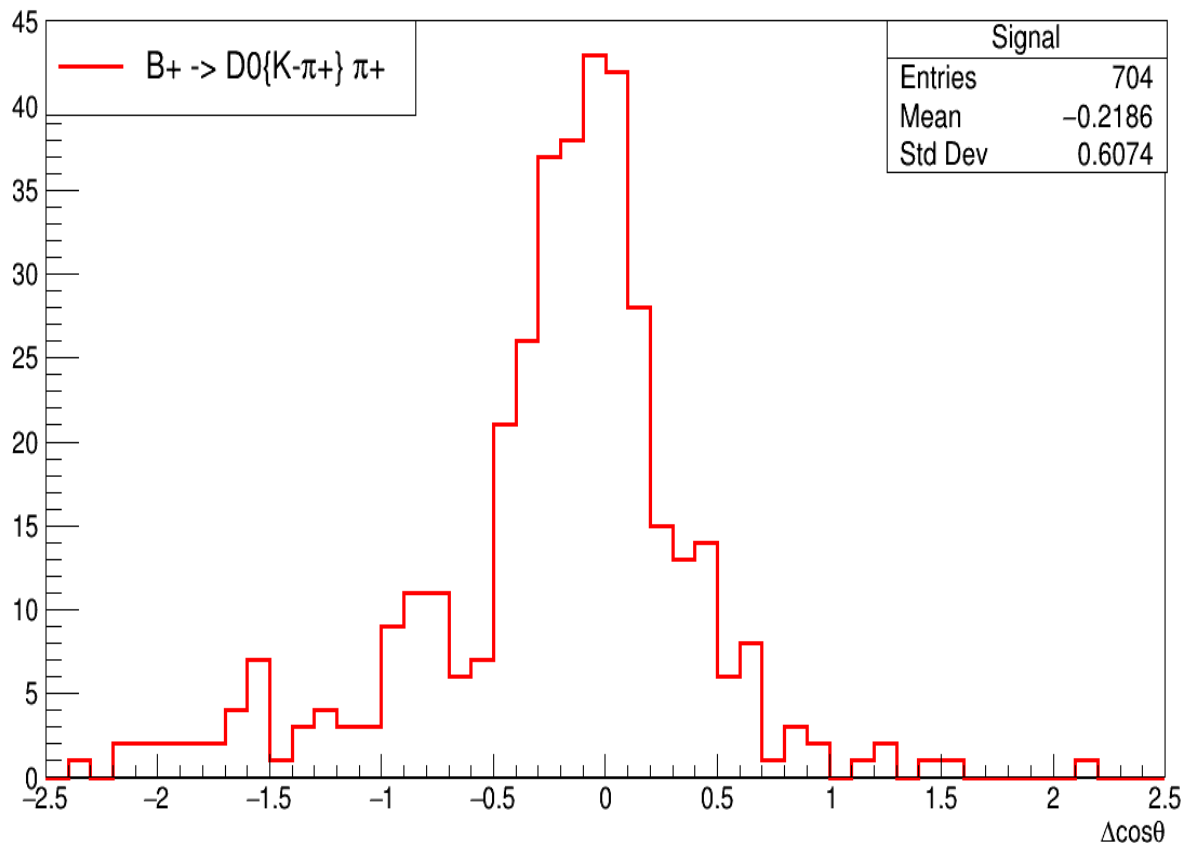
- Rank 1
- $M_{bc} > 5.27$
- $-0.050 < \Delta E < 0.050$
- $abs(sin_phi) < 1.1$
- $abs(m_{hadROE} - 2.006) < 0.015$
- $1.3 < m_{hadROE} < 5.3$ GeV (reco. level)



Best sum b/w D and D*

Cuts applied

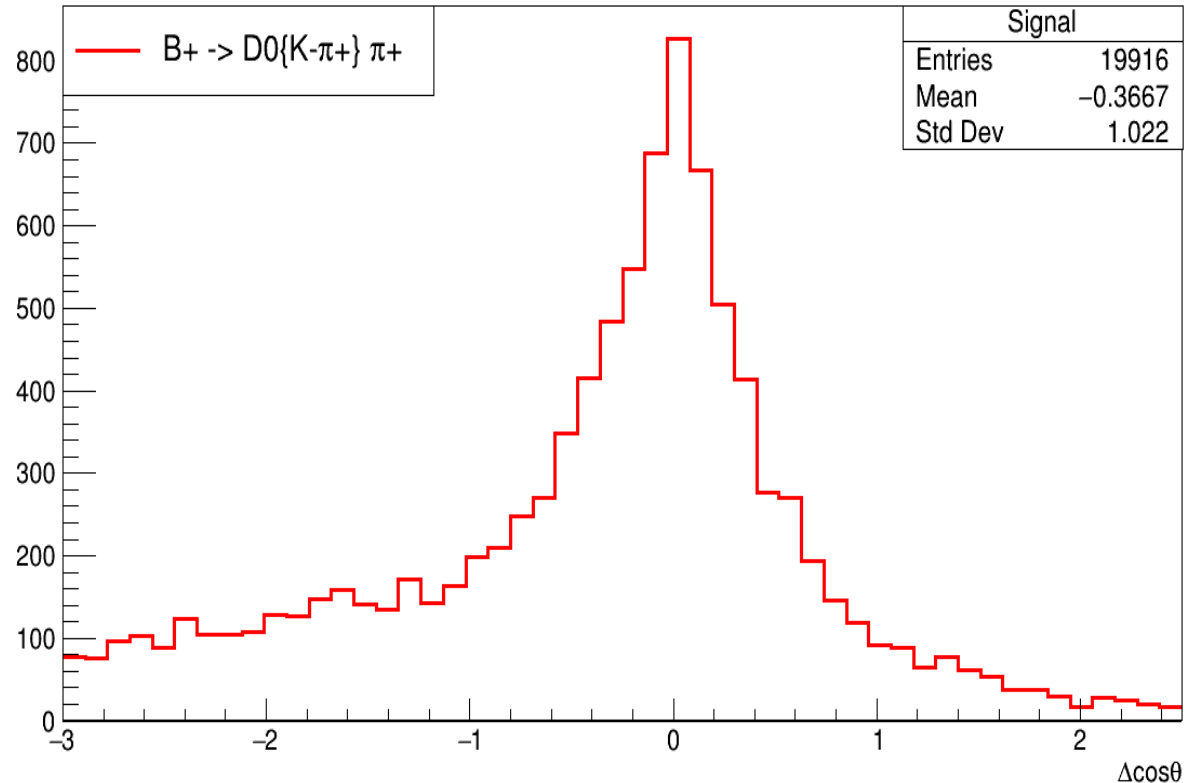
- Rank 1
- $M_{bc} > 5.27$
- $-0.050 < \Delta E < 0.050$
- $\text{abs}(\sin_phi) < 1.1$
- $\text{abs}(m_{\text{hadROE}} - 1.96) < 0.015$
- $1.3 < m_{\text{hadROE}} < 5.3 \text{ GeV (reco. level)}$



Best sum greater than D*

Cuts applied

- Rank 1
- $M_{bc} > 5.27$
- $-0.050 < \Delta E < 0.050$
- $\text{abs}(\sin_phi) < 1.1$
- $M_{\text{hadROE}} > 2.006$
- $1.3 < m_{\text{hadROE}} < 5.3 \text{ GeV (reco. level)}$



Best sum less than D0

Cuts applied

- Rank 1
- $M_{bc} > 5.27$
- $-0.050 < \Delta E < 0.050$
- $\text{abs}(\sin_phi) < 1.1$
- $M_{\text{hadROE}} < 1.86$
- $1.3 < m_{\text{hadROE}} < 5.3$ GeV (reco. level)

