Update
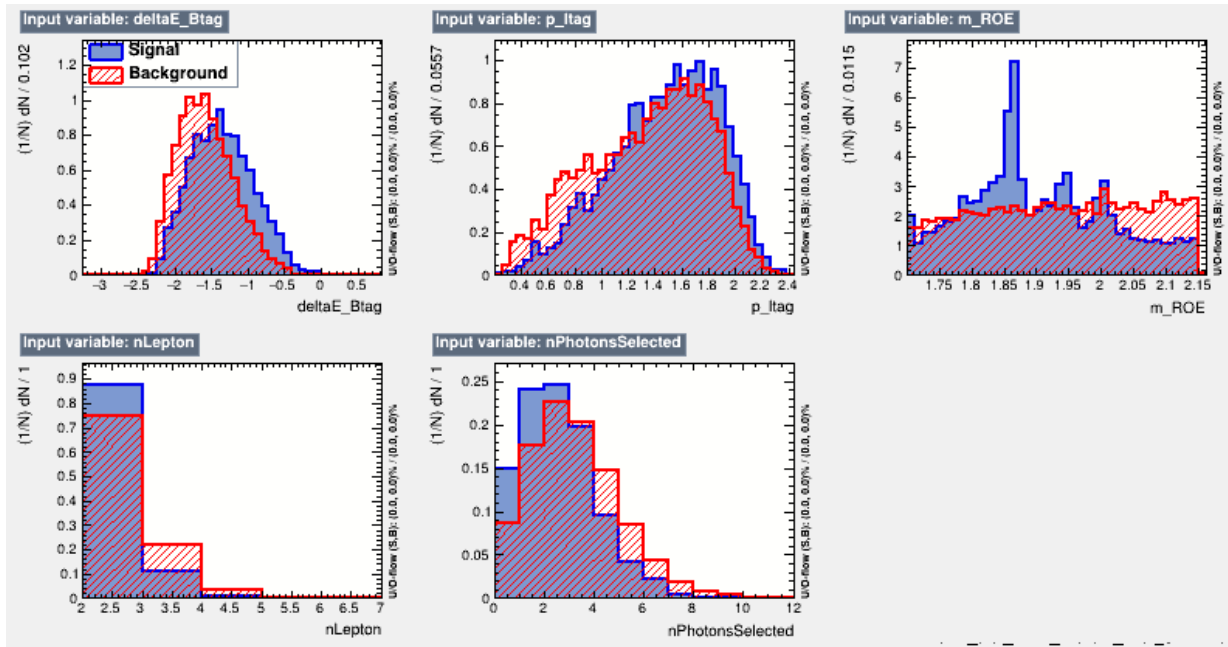
BDT without *best_sum* variable

06/12/2024

Approach #1

- Testing and training on the 1.0 M τ→π sample.

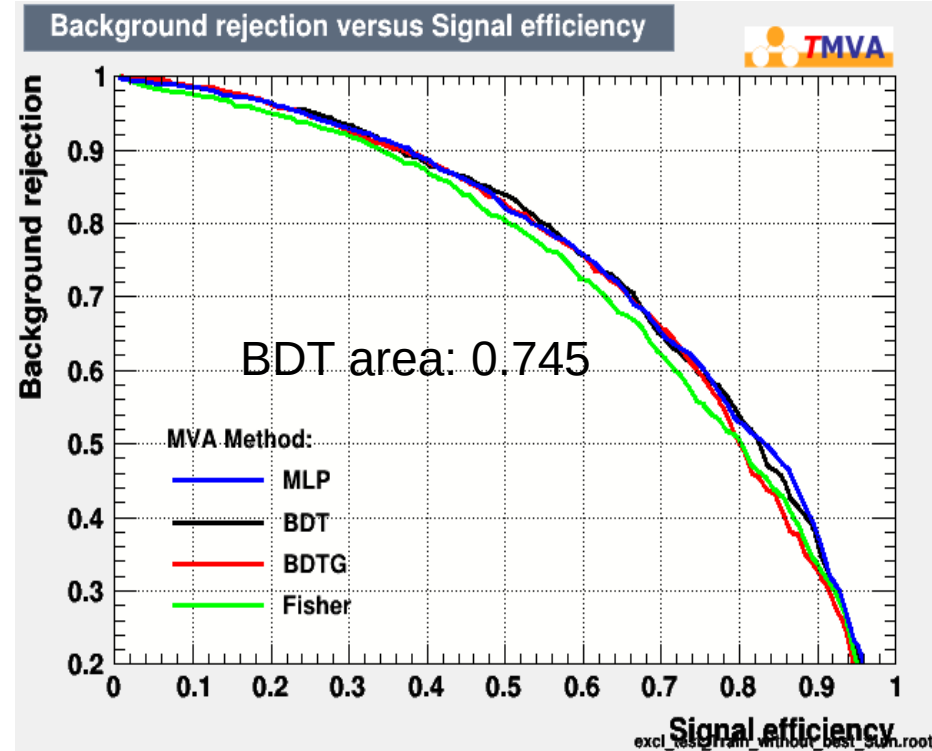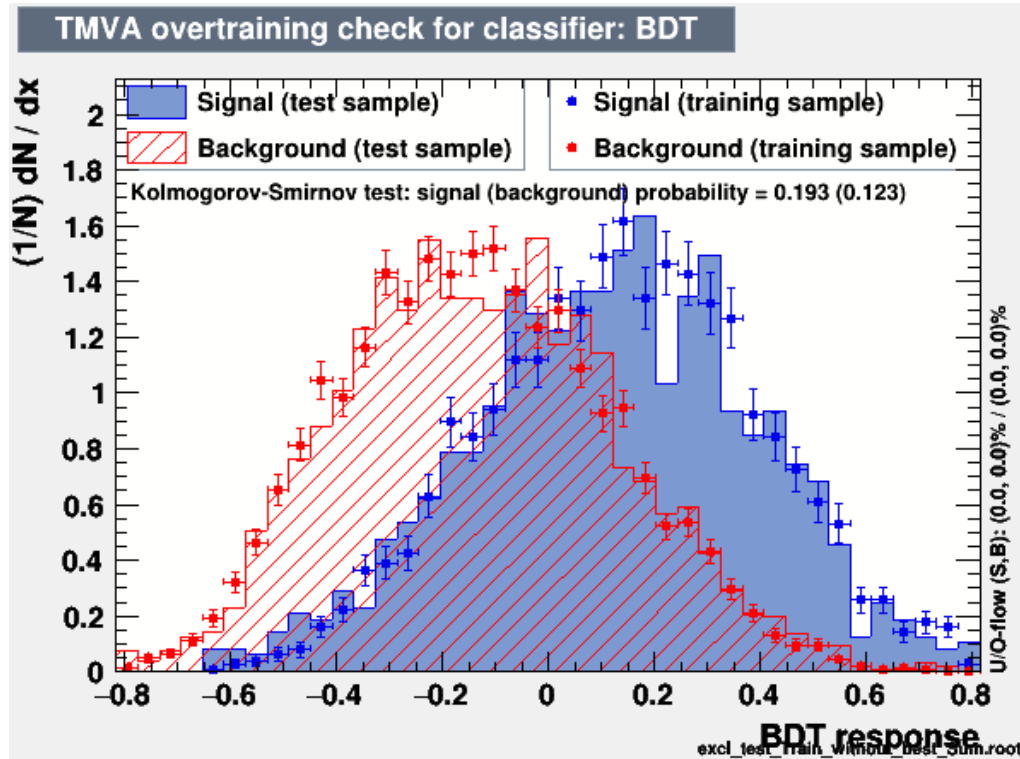**Var. importance**

```
Ranking result (top variable is best ranked)
-------------------------------------------------
Rank : Variable          : Variable Importance
-------------------------------------------------
   1 : deltaE_Btag       : 2.614e-01
   2 : m_ROE             : 2.388e-01
   3 : p_ltag            : 2.146e-01
   4 : nPhotonsSelected  : 1.644e-01
   5 : nLepton           : 1.207e-01
```

Approach #1

- Testing and training on the 1.0 M τ→π sample.

Approach #2

- Testing and training on the 8.9 M τ → generic sample.
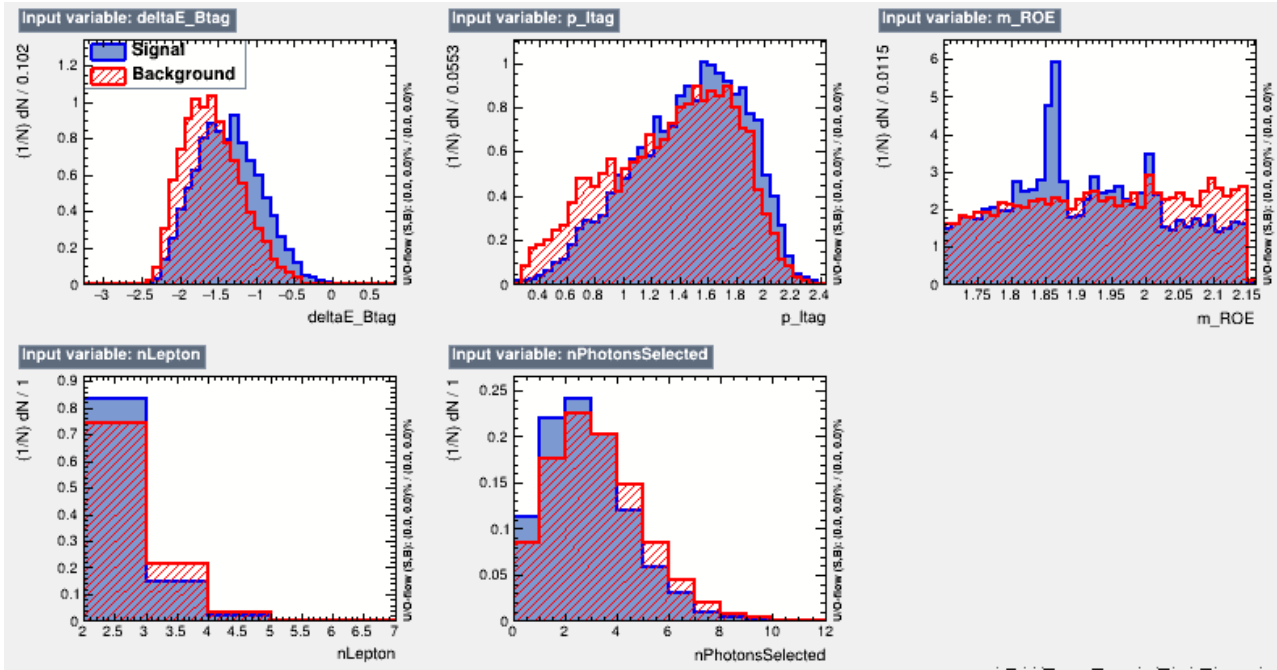
Var. importance

Ranking result (top variable is best ranked)

Rank : Variable   : Variable Importance
----
   1 : deltaE_Btag   : 2.957e-01
   2 : m_ROE   : 2.766e-01
   3 : p_ltag   : 1.969e-01
   4 : nPhotonsSelected   : 1.467e-01
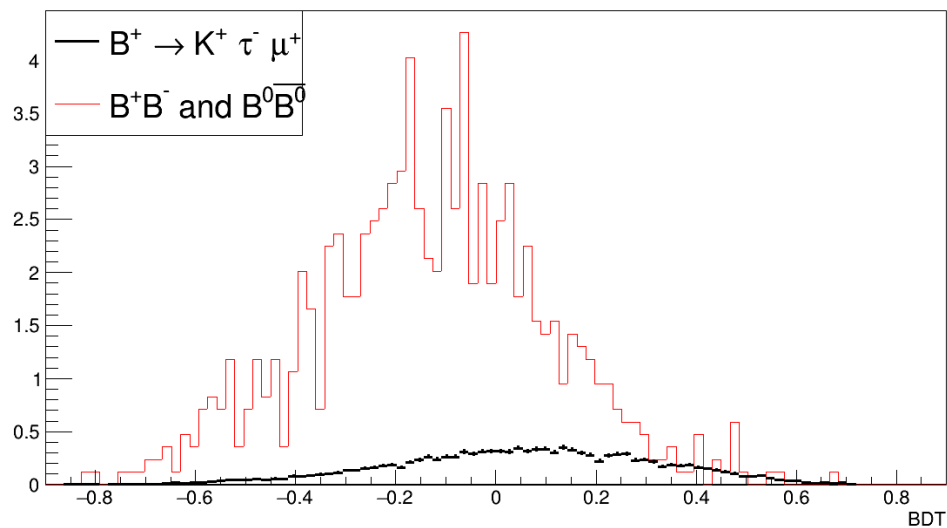   5 : nLepton   : 8.412e-02

Approach #2

- Testing and training on the 8.9 M τ→ generic sample.
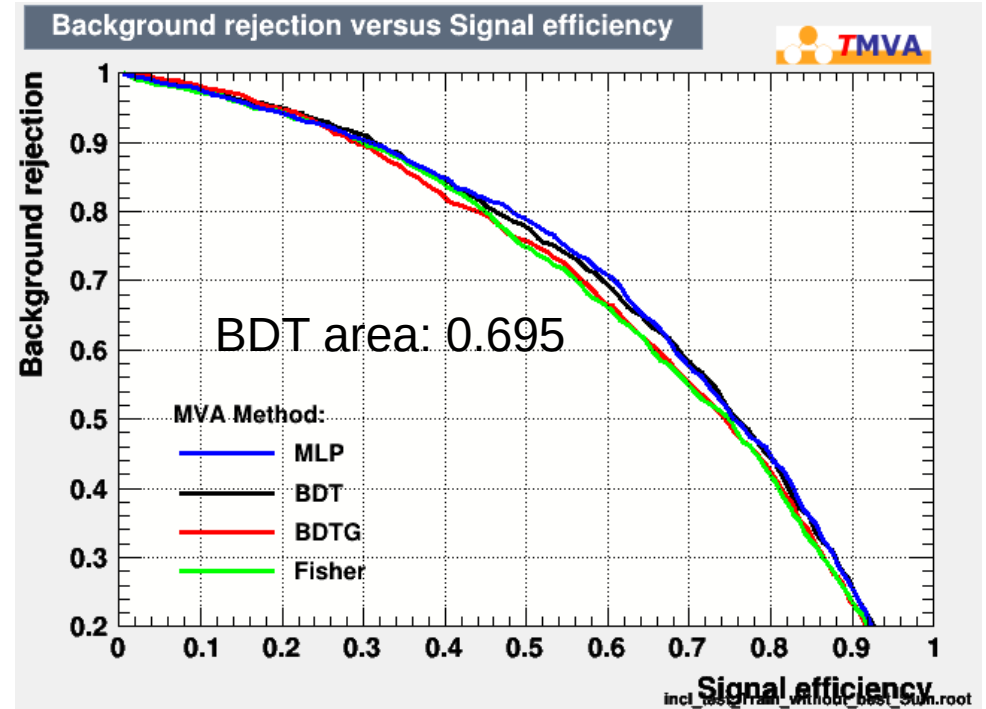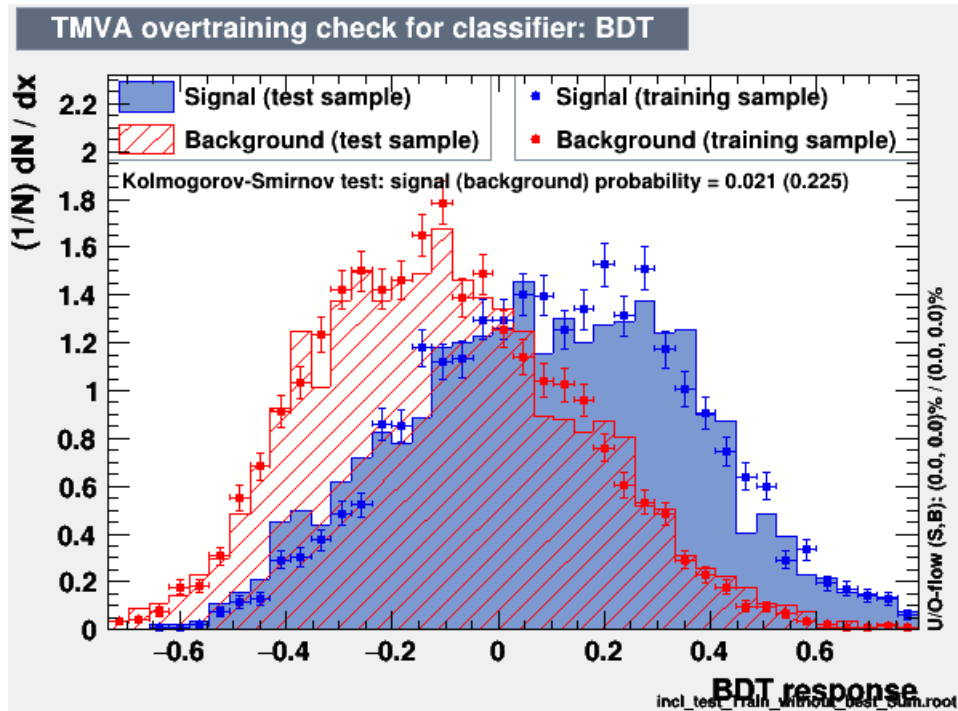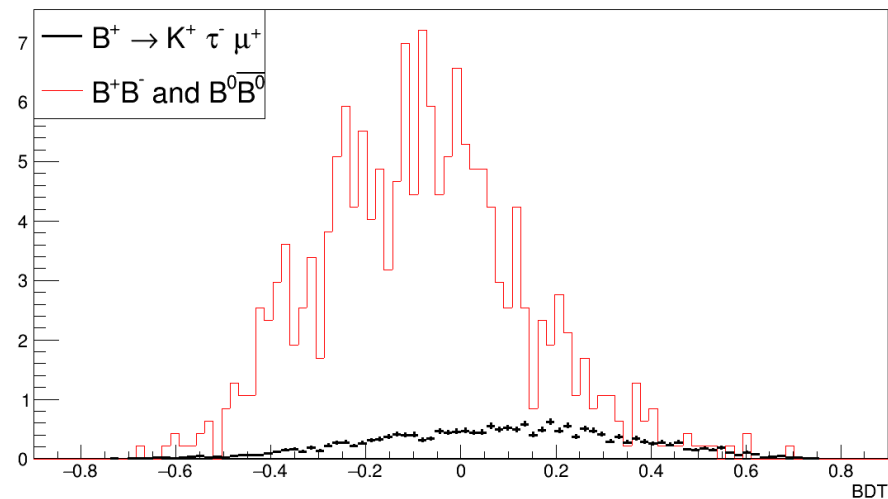
Normalized BDT plots

Approach 1

Approach 2

N_{sig} = 12, N_{bg} = 91

N_{sig} = 19, N_{bg} = 163

Back up

Approach #1

deltaE_Btag:BDT {BDT>-1&&classID==0}

$B^+ \rightarrow K^+ \tau^- \mu^+$

m_ROE:BDT {BDT>-1&&classID==0}

$B^+ \rightarrow K^+ \tau^- \mu^+$

Approach #1

nLepton:BDT {BDT>-1&&classID==0}

nPhotonsSelected:BDT {BDT>-1&&classID==0}

$B^+ \to K^+ \tau^- \mu^+$

$B^+ \to K^+ \tau^- \mu^+$