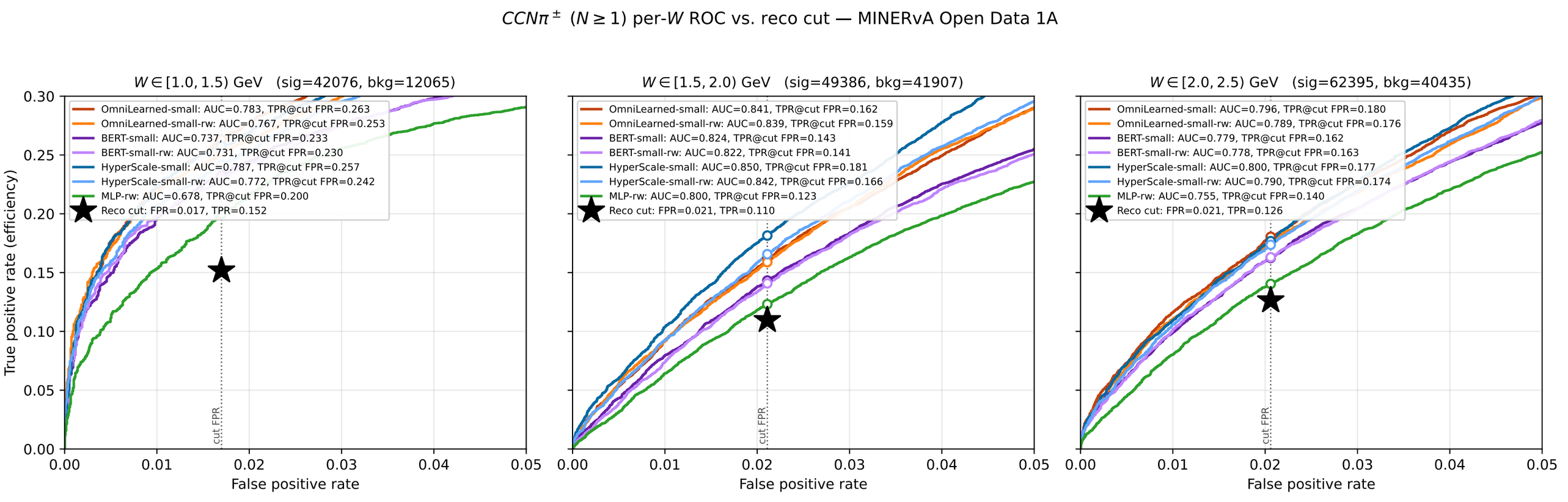

$CCN\pi^{\pm}$ ($N \geq 1$) per-$W$ ROC vs. reco cut — MINERvA Open Data 1A
$W \in [1.0, 1.5)$ GeV (sig=42076, bkg=12065)
OmniLearned-small: AUC=0.783, TPR@cut FPR=0.263
OmniLearned-small-rw: AUC=0.767, TPR@cut FPR=0.253
BERT-small: AUC=0.737, TPR@cut FPR=0.233
BERT-small-rw: AUC=0.731, TPR@cut FPR=0.230
HyperScale-small: AUC=0.787, TPR@cut FPR=0.257
HyperScale-small-rw: AUC=0.772, TPR@cut FPR=0.242
MLP-rw: AUC=0.678, TPR@cut FPR=0.200
Reco cut: FPR=0.017, TPR=0.152
cut FPR
$W \in [1.5, 2.0)$ GeV (sig=49386, bkg=41907)
OmniLearned-small: AUC=0.841, TPR@cut FPR=0.162
OmniLearned-small-rw: AUC=0.839, TPR@cut FPR=0.159
BERT-small: AUC=0.824, TPR@cut FPR=0.143
BERT-small-rw: AUC=0.822, TPR@cut FPR=0.141
HyperScale-small: AUC=0.850, TPR@cut FPR=0.181
HyperScale-small-rw: AUC=0.842, TPR@cut FPR=0.166
MLP-rw: AUC=0.800, TPR@cut FPR=0.123
Reco cut: FPR=0.021, TPR=0.110
cut FPR
$W \in [2.0, 2.5)$ GeV (sig=62395, bkg=40435)
OmniLearned-small: AUC=0.796, TPR@cut FPR=0.180
OmniLearned-small-rw: AUC=0.789, TPR@cut FPR=0.176
BERT-small: AUC=0.779, TPR@cut FPR=0.162
BERT-small-rw: AUC=0.778, TPR@cut FPR=0.163
HyperScale-small: AUC=0.800, TPR@cut FPR=0.177
HyperScale-small-rw: AUC=0.790, TPR@cut FPR=0.174
MLP-rw: AUC=0.755, TPR@cut FPR=0.140
Reco cut: FPR=0.021, TPR=0.126
cut FPR
True positive rate (efficiency)
False positive rate
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.01
0.02
0.03
0.04