XGBoost output, 2HDMa a150 H500 tb10 uu dataset, uscaled validation data Background Signal  $10^{6}$ 10<sup>5</sup>  $10^{4}$ Events 10<sup>3</sup> 10<sup>2</sup>  $10^{1}$ 10<sup>0</sup> 0.4 0.2 0.0 0.6 8.0 1.0

XGBoost output