

A Top Friendship: Measurement of $t\bar{t}H$ production in the $H(bb)$ decay channel at ATLAS with Transformer Networks

Friday, 19 July 2024 20:40 (20 minutes)

The exploration of the Higgs boson's properties and its interactions with top quarks constitutes a pivotal aspect of the post-Higgs discovery era. Among these, the measurement of the associated production of a Higgs boson with a pair of top quarks ($t\bar{t}H$) offers a unique window into the Yukawa coupling between the Higgs and the top quark, the heaviest known fundamental particle. This poster presents the latest results on $t\bar{t}H$ production with the Higgs boson decaying into a pair of bottom quarks ($H\rightarrow b\bar{b}$), performed by the ATLAS collaboration. A key focus is placed on the improved MVA strategy, which incorporates permutation-invariant architectures utilising attention mechanisms, for enhancements in both multi-class classification of signal and background events, and Higgs candidate reconstruction.

Alternate track

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Yes

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Session Classification: Poster Session 2

Track Classification: 01. Higgs Physics