

Adversarial training for $t\bar{t}H(bb)$ classification

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Event classification trained on Monte Carlo data can lead to a training bias towards the generator of the training sample, typically evaluated as a systematic error by comparing to an alternative generator model. For the case of the search for a top-quark pair produced in association with a Higgs boson decaying to bottom-quark at the LHC, we demonstrate how adversarial domain adaptation can reduce such training bias. A signal vs background classification network is extended by a discriminator so that the classification response is more uniform for alternative background generators.

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