

## The $h(bb)$ + missing transverse momentum signature in the 2HDM + pseudoscalar simplified model

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The two-Higgs-doublet model with an additional pseudoscalar represents a simplified and ultraviolet-complete model for Dark Matter. It provides a wide spectrum of collider signatures, including a  $Z$  or a Higgs boson and missing transverse momentum, with detectable cross-sections at the LHC. In the context of this model, the sensitivity of an existing search of the ATLAS experiment for the signature of a 125 GeV Higgs boson decaying to two  $b$  quarks and missing transverse momentum from Dark Matter particles is discussed. The exclusion potential is estimated using simplified detector-level limits previously published by the ATLAS Collaboration.

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