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ALPs vs. CP-odd Higgs bosons at the LHC

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We analyze possible signatures of an ALP with masses above ~ 400 GeV at the (HL-)LHC in the $t\bar{t}$ decay channel. In particular, we demonstrate that such an ALP could be distinguished from a CP-even Higgs boson with the same mass and the same $t\bar{t}$ cross section with the help of $m_{t\bar{t}}$ distributions. We obtain new limits on the effective ALP couplings to top quarks and gluons.

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