

# Exotic meson studies at LHCb

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Studies of exotic mesons with the data collected by the LHCb experiment at the LHC will be discussed. We will report measurements of the production and properties of the  $X(3872)$  state [1] and outline on-going studies of this meson in LHCb in  $B$  decays and prompt production. We will describe a search for the controversial  $X(4140)$  state [2] and discuss the prospects for further studies of exotic mesons.

- [1] “Observation of  $X(3872)$  production in  $pp$  collisions at  $\sqrt{s} = 7$  TeV”, R. Aaij *et al.* (LHCb collaboration), LHCb-PAPER-2011-034, CERN-PH-EP-2011-216, arXiv:1112.53 (accepted by Eur. Phys. J.C.)
- [2] “Search for the  $X(4140)$  state in  $B^+ \rightarrow J/\psi\phi K^+$ ”, R. Aaij *et al.* (LHCb collaboration), LHCb-PAPER-2011-033, CERN-PH-EP-2012-004, arXiv:1202.5087 (submitted to Phys. Rev. D)

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