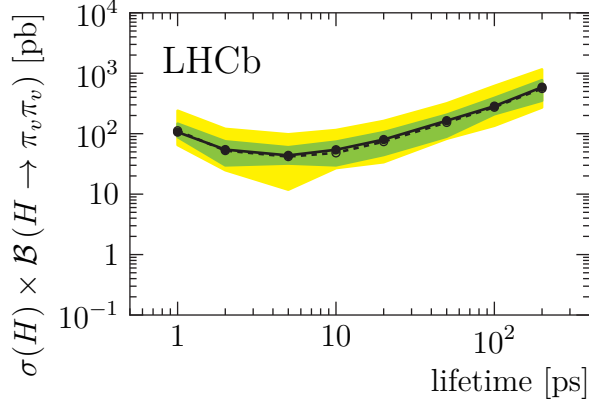
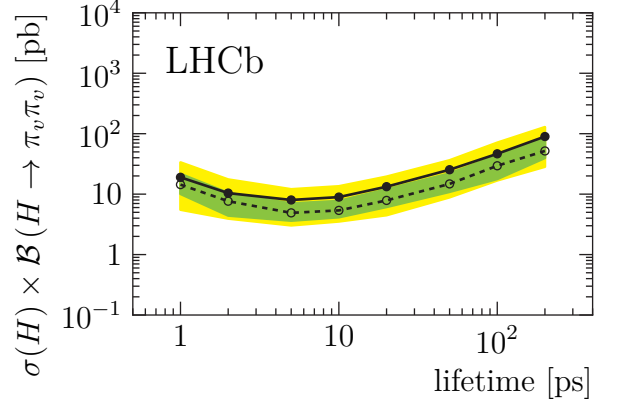


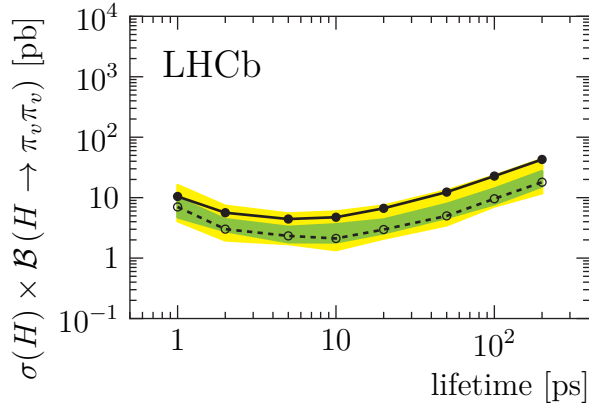
# Supplementary material for LHCb-PAPER-2014-062



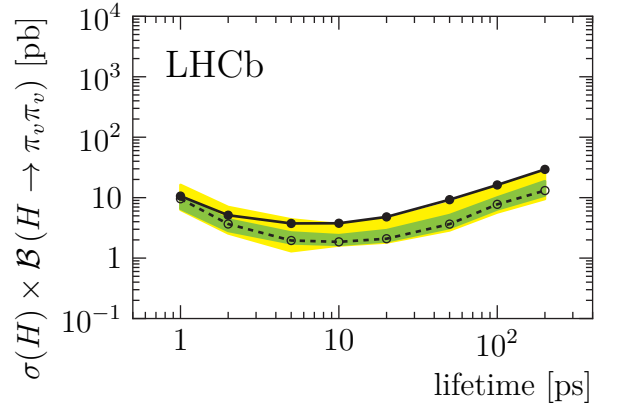
(a)  $m_{\pi_v} = 25 \text{ GeV}/c^2$



(b)  $m_{\pi_v} = 35 \text{ GeV}/c^2$



(c)  $m_{\pi_v} = 43 \text{ GeV}/c^2$



(d)  $m_{\pi_v} = 50 \text{ GeV}/c^2$

Figure 1: Expected (dashed line) and observed (solid line) upper limits at the 95% confidence level, as a function of lifetime, for various hidden valley models. The green and yellow regions represent the 1- and 2-sigma error bands of the expected limit.

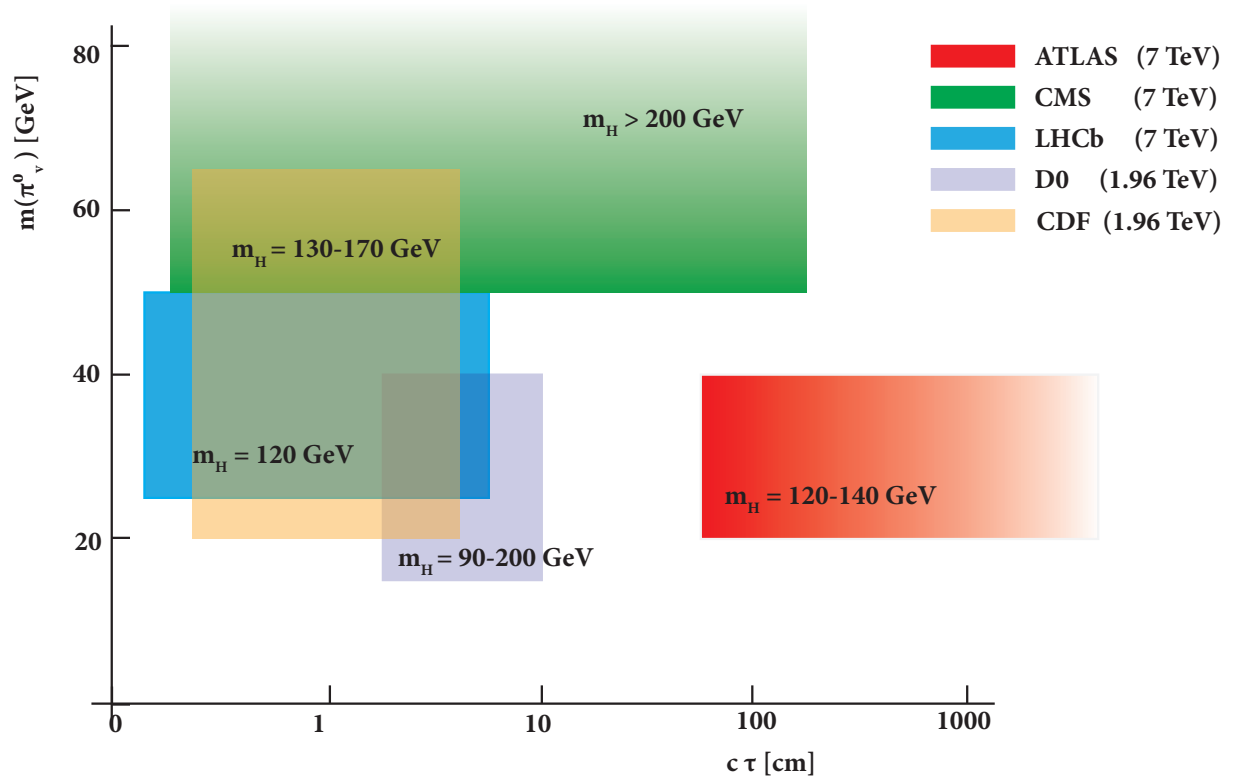


Figure 2: Schematic representation of the regions in which different experiments at the Tevatron and at the LHC have reported results for hadronic signatures with a displaced vertex. The CMS and ATLAS regions extend to higher masses and lifetimes than displayed, respectively. All experiments use a different Higgs mass, which is indicated in the figure.