

Supplementary material for LHCb-PAPER-2016-065

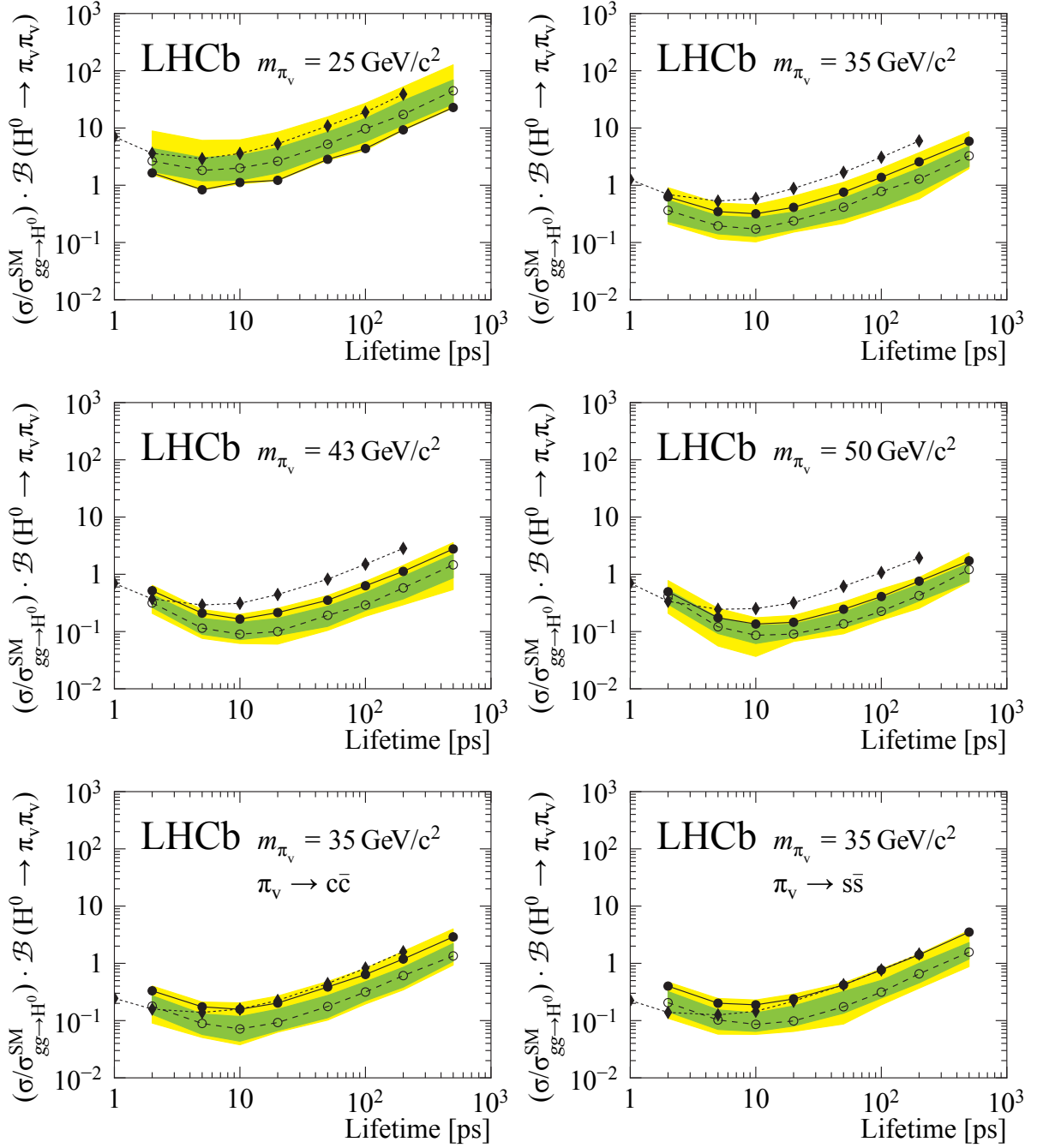


Figure 1: Expected (open circles and dotted line) and observed (filled circles and solid line) upper limit versus lifetime for different π_ν masses and decay modes. The green (dark) and yellow (light) bands indicate the quantiles of the expected upper limit corresponding to $\pm 1\sigma$ and $\pm 2\sigma$ for a Gaussian distribution. The decay $\pi_\nu \rightarrow b\bar{b}$ is assumed, unless specified otherwise. For comparison, the observed upper limits from the previous analysis LHCb-PAPER-2014-062 are added with diamond symbols and a dotted line.

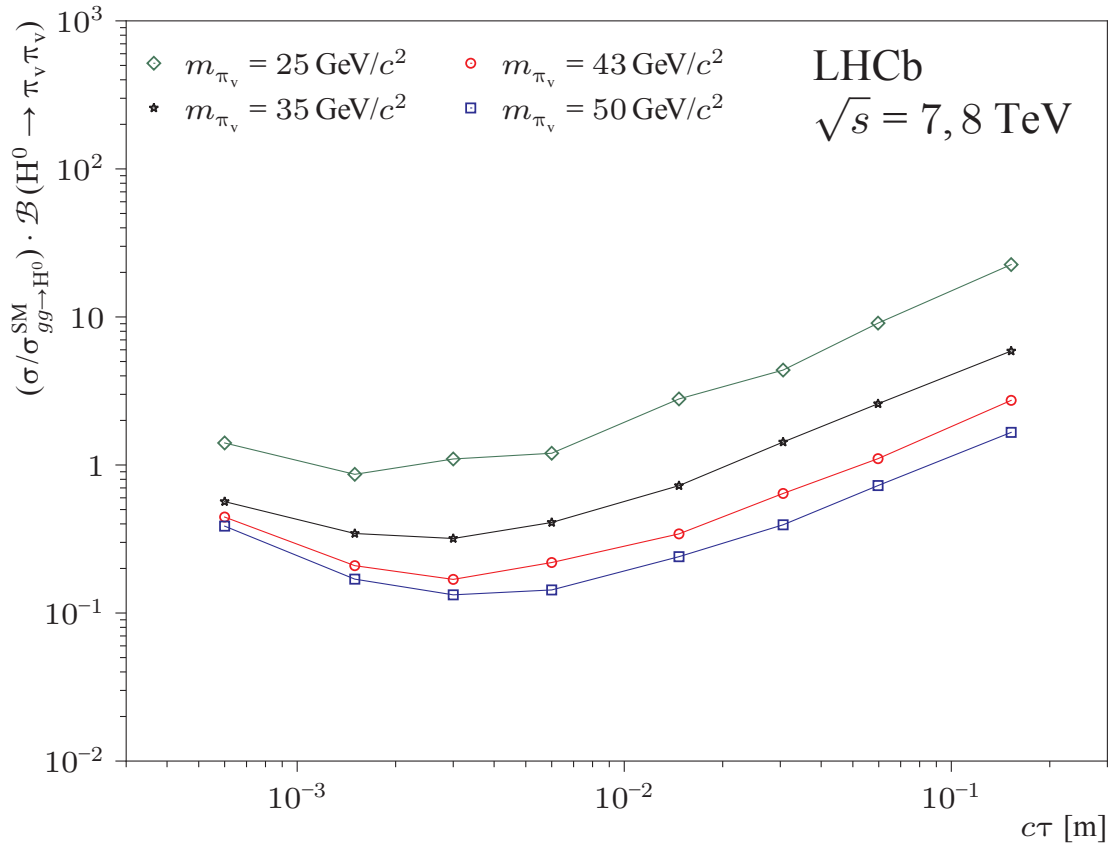


Figure 2: Observed upper limit versus lifetime for different π_v masses, assuming the decay $\pi_v \rightarrow b\bar{b}$. This is an alternative version of Fig. 4 with $c\tau$ in m on the x -axis.

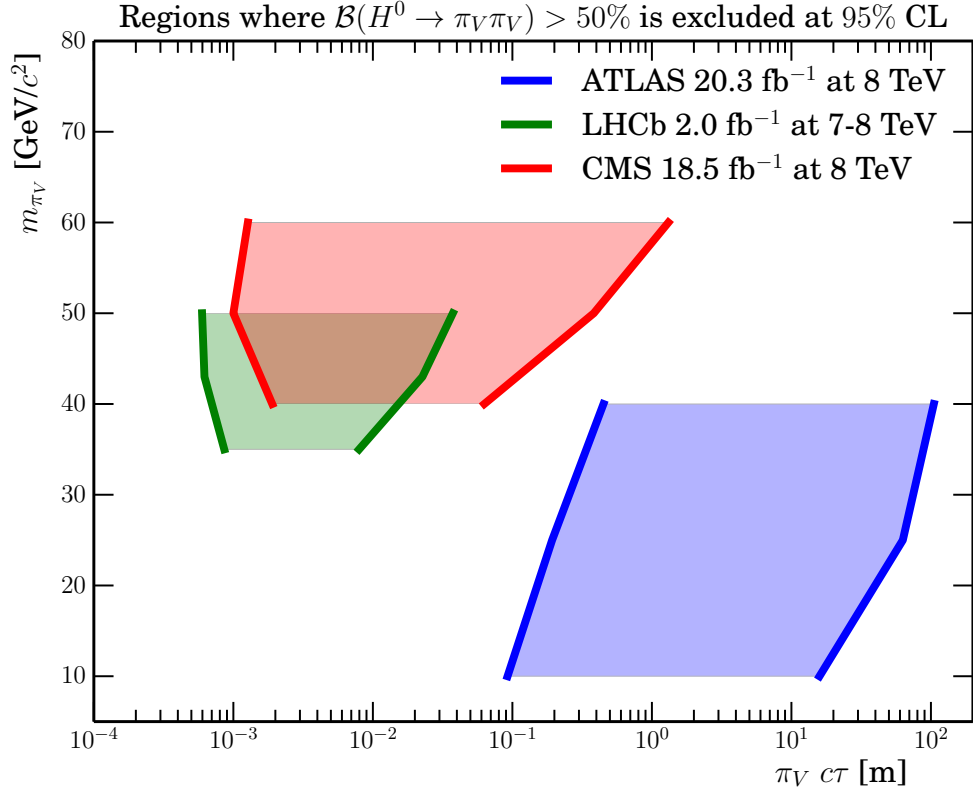


Figure 3: π_V lifetime and mass ranges where branching ratios $\mathcal{B}(H^0 \rightarrow \pi_V \pi_V) > 50\%$ are excluded, assuming the production of π_V particles in pairs in the decay of a Standard-Model-like Higgs boson with a mass of $125 \text{ GeV}/c^2$, due to searches performed by the LHCb, ATLAS and CMS collaborations. The LHCb exclusion region (in green) corresponds to the results in this paper, the ATLAS (blue) and CMS (red) exclusion regions are taken from Phys. Rev. D92 (2015) 073008, where a combination was made of ATLAS results, taking the most sensitive result for each parameter point, and the CMS results were recast to take into account the different H^0 boson mass assumed in the experimental analysis.