

Search for $A' \rightarrow \mu\mu$ Decay

LHCb Collaboration

hep-ex: 1910.06926

October 1, 2019

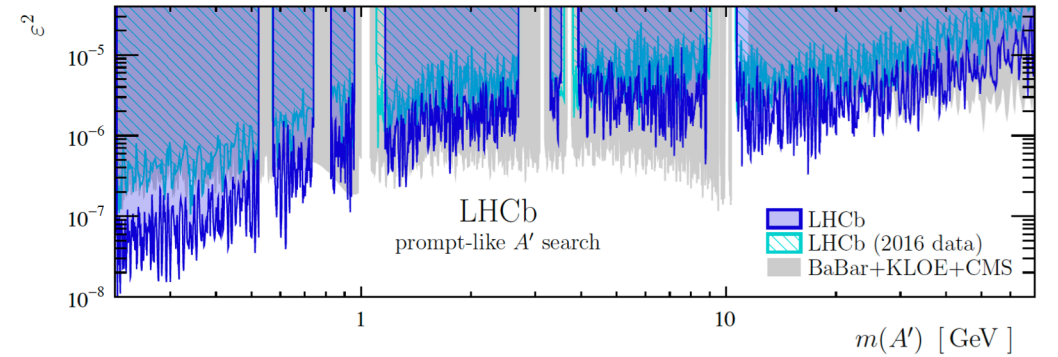
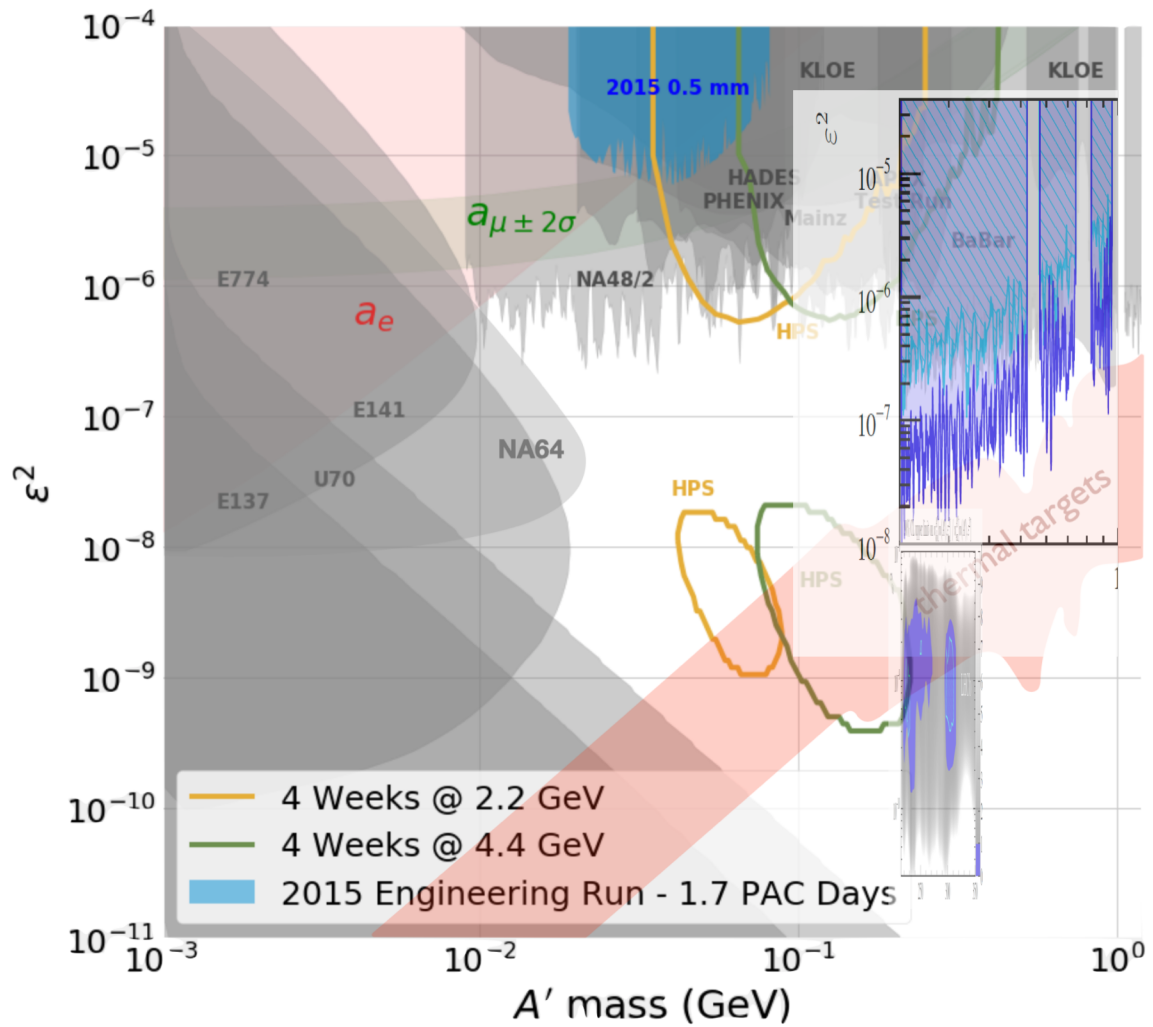


Figure 2: Regions of the $[m(A'), \epsilon^2]$ parameter space excluded at 90% CL by the prompt-like A' search compared to the best published [33, 36, 81] and preliminary [99] limits.

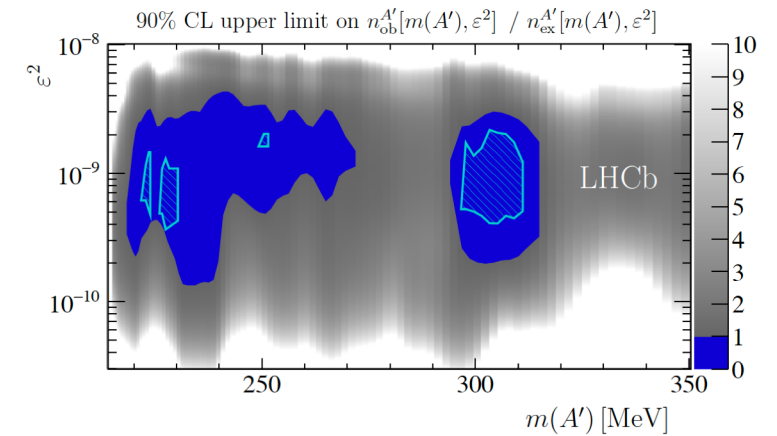


Figure 4: Ratio of the observed upper limit on $n_{\text{obs}}^{A'}[m(A'), \epsilon^2]$ at 90% CL to the expected dark-photon yield, $n_{\text{ex}}^{A'}[m(A'), \epsilon^2]$, where regions less than unity are excluded. The only constraints in this region are from (hashed) the previous LHCb search [81].

Prompt Decay

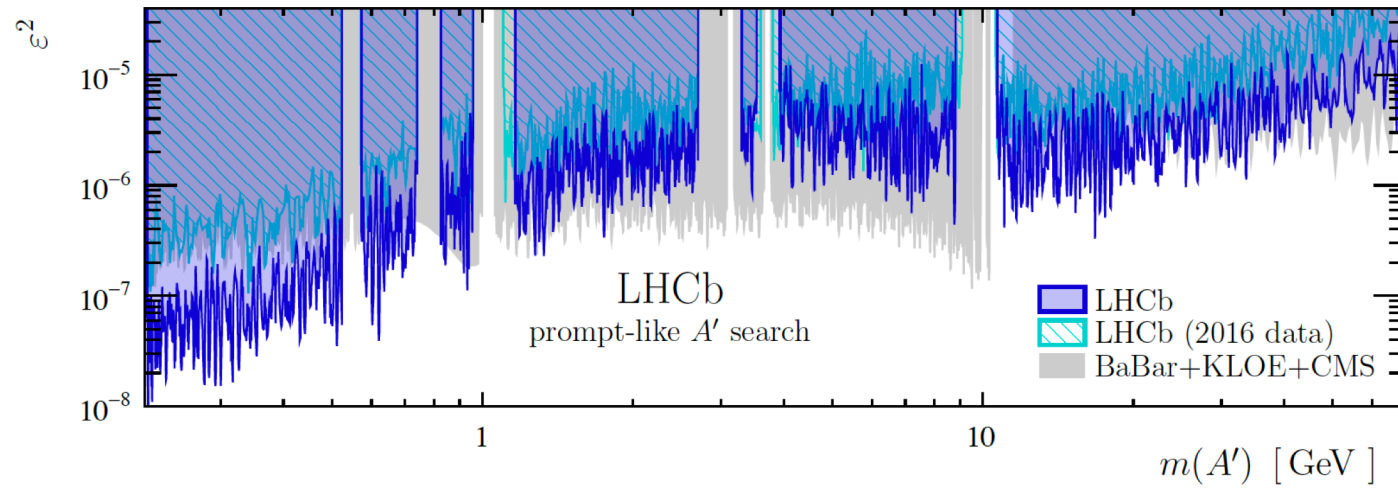


Figure 2: Regions of the $[m(A'), \epsilon^2]$ parameter space excluded at 90% CL by the prompt-like A' search compared to the best published [33, 36, 81] and preliminary [99] limits.

Detached vertexes

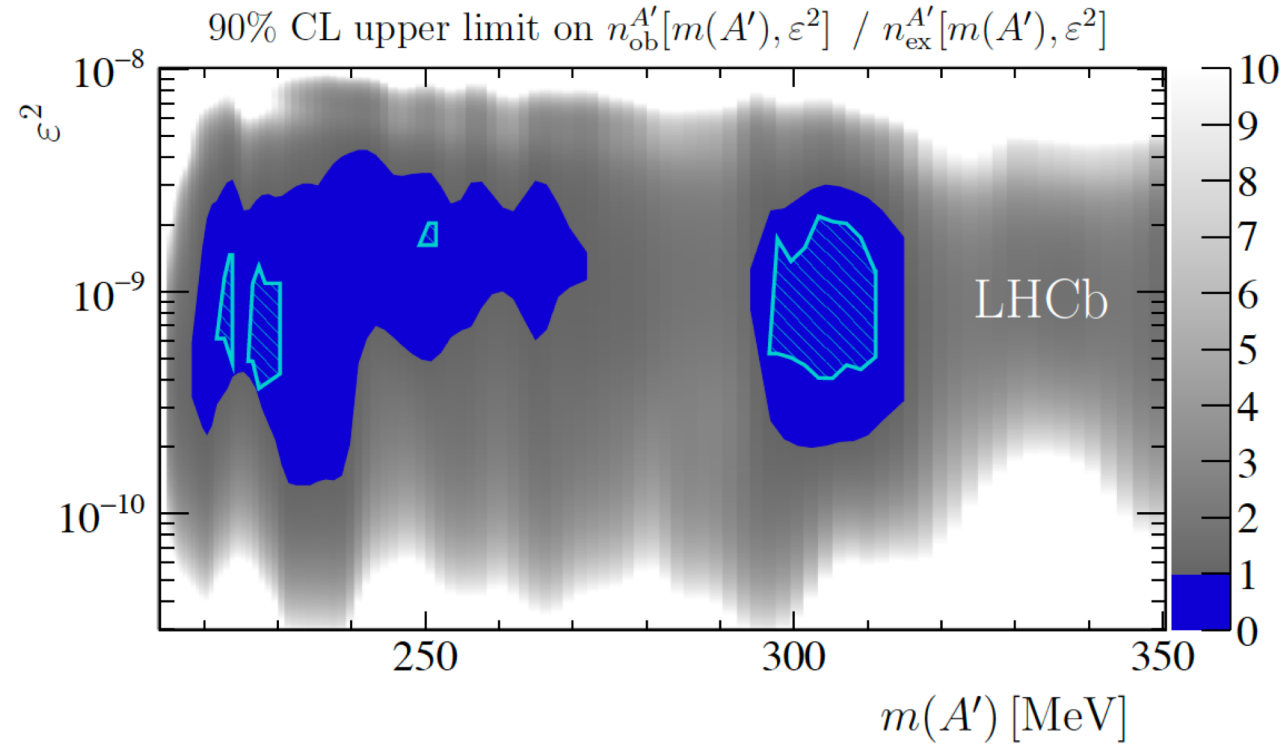


Figure 4: Ratio of the observed upper limit on $n_{\text{ob}}^{A'}[m(A'), \epsilon^2]$ at 90% CL to the expected dark-photon yield, $n_{\text{ex}}^{A'}[m(A'), \epsilon^2]$, where regions less than unity are excluded. The only constraints in this region are from (hashed) the previous LHCb search [81].