

# Supplementary material for LHCb-PAPER-2020-022

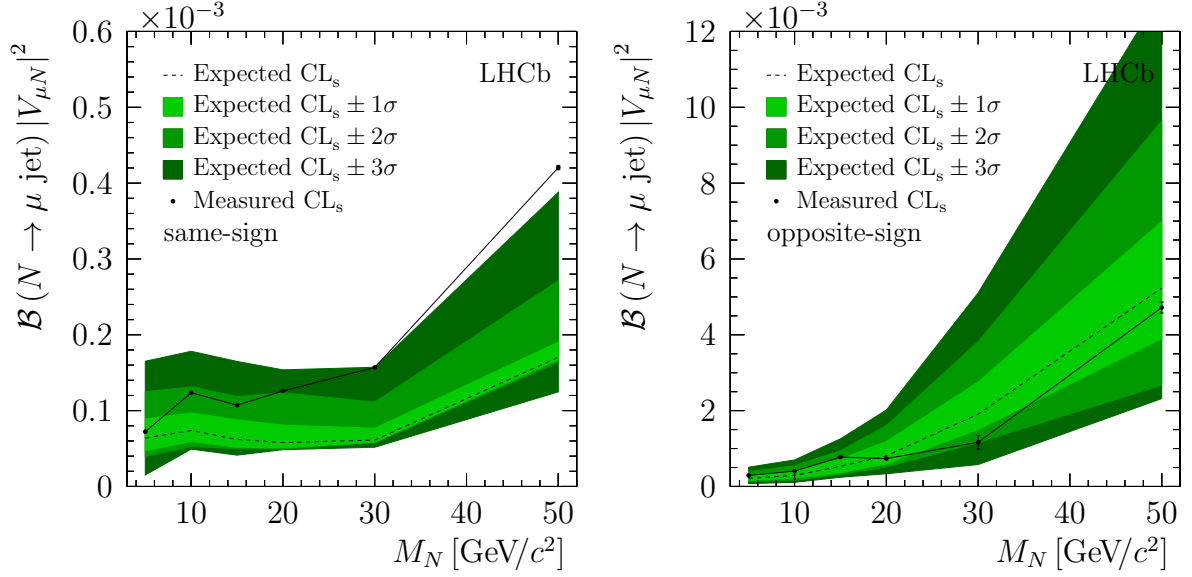


Figure 1: Expected (dashed line) and observed (solid line) upper limit on  $\mathcal{B}(N \rightarrow \mu \text{ jet}) |V_{\mu N}|^2$  at 95% C.L. for (left) the same-sign muons sample and (right) the opposite-sign muons sample. No lifetime correction is applied. The bands of different shades of green indicate, from light to dark, the  $1\sigma$ ,  $2\sigma$  and  $3\sigma$  uncertainties on the expected upper limits.

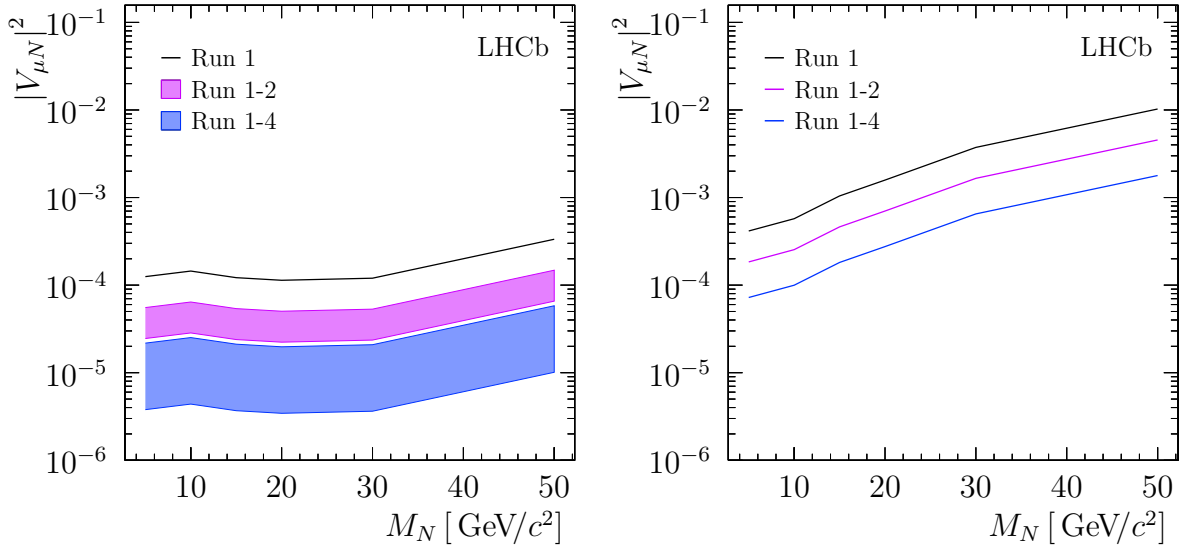


Figure 2: Extrapolated limits on  $|V_{\mu N}|^2$  at 95% confidence level for (left) the same-sign and (right) opposite-sign muons sample to Run 1 and 2 dataset (purple) and Run 1 to 4 dataset (blue). The expected upper limit using the data acquired during Run 1 is also shown (black).