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## **【343】 Search for the $B_s^0 \rightarrow \mu^+ \mu^- \gamma$ decay with photon conversions**

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Flavor-changing neutral currents, forbidden at tree level in the Standard Model, serve as sensitive indicators of new physics. A particularly promising channel is the decay  $B_s^0 \rightarrow \mu^+ \mu^- \gamma$ , which is unaffected by chiral suppression, unlike its nonradiative counterpart. Leveraging recent studies at LHCb, we introduce a novel detection technique that employs photon conversion in the VELO detector to analyze proton-proton collision data, corresponding to an integrated luminosity of  $5.4 \text{ fb}^{-1}$  at  $\sqrt{s} = 13 \text{ TeV}$ . This method aims to refine and extend the existing limits on the branching fraction, enhancing our understanding of the underlying physics.

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