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Hadron production fraction ratios and his relationship with Search for new physics using $B \rightarrow \mu\mu$ decays

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Rare B meson decays provide a sensitive probe for beyond standard model (BSM) effects. In this talk, some CMS measurements of rare $B_{\{s,d\}}$ meson properties will be discussed, including the branching fractions and effective lifetimes.

In addition, the fractions of B_u , B_d , and B_s mesons are denoted by f_u , f_d , and f_s , respectively. Measurements of B_s branching fractions generally rely on ratios to B_u or B_0 decay modes, which requires knowledge of f_s/f_u or f_s/f_d , respectively. In fact, we will discuss how measurements of the rare decay $B_s \rightarrow \mu\mu$, are limited by the uncertainty in f_s/f_u .

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