

Study of the rare decays of B_s^0 and B^0 into muon pairs from data collected during 2015 and 2016 with the ATLAS detector.

Saturday, 1 December 2018 13:15 (15 minutes)

A study of the decays $B_s^0 \rightarrow \mu^+ \mu^-$ and $B^0 \rightarrow \mu^+ \mu^-$ has been performed using 26.3 fb^{-1} of 13 TeV LHC proton-proton collisions collected with the ATLAS detector in 2015 and 2016. For B_s^0 , the branching fraction $BR(B_s^0 \rightarrow \mu^+ \mu^-) = (3.2_{-1.0}^{+1.1}) \times 10^{-9}$ is measured. For the B^0 , an upper limit on the branching fraction is set at $BR(B^0 \rightarrow \mu^+ \mu^-) < 4.3 \times 10^{-10}$ at 95 confidence level. The result is combined with the full Run 1 ATLAS result, yielding $BR(B_s^0 \rightarrow \mu^+ \mu^-) = (2.8_{-0.7}^{+0.8}) \times 10^{-9}$ and $BR(B^0 \rightarrow \mu^+ \mu^-) < 2.1 \times 10^{-10}$. The combined result is consistent with the Standard Model within 2.4 standard deviations.

Session

Works in Progress (15+5 min)

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Session Classification: Works in Progress