

Abstract Submitted  
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**Study of the rare decays of  $B_s^0$  and  $B^0$  mesons into muon pairs using data collected during 2015 and 2016 with the ATLAS detector**<sup>1</sup>

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A study of the decays  $B_s^0 \rightarrow \mu^+\mu^-$  and  $B^0 \rightarrow \mu^+\mu^-$  has been performed using 26.3 fb<sup>1</sup> of 13 TeV LHC proton-proton collision data collected with the ATLAS detector in 2015 and 2016. Since the detector resolution in  $\mu^+\mu^-$  invariant mass is comparable to the  $B_s^0 - B^0$  mass difference, a single fit determines the signal yields for both decay modes. This results in a measurement of the branching fraction  $\mathcal{B}(B_s^0 \rightarrow \mu^+\mu^-) = (3.2_{-1.0}^{+1.1}) \times 10^{-9}$  and an upper limit  $\mathcal{B}(B^0 \rightarrow \mu^+\mu^-) < 4.3 \times 10^{-10}$  at 95

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