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Rare B decays results and prospects in ATLAS

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Searches of processes beyond the Standard Model (SM) are among the main topics of interest at the ATLAS experiment. Indirect evidence of such processes may be obtained by observing rare leptonic and semi-leptonic decays of beauty hadrons. The branching ratio of the decay $B_s \rightarrow \mu \mu$ is sensitive to theoretical models extending the SM. Its measurement may confirm or contradict such models. The forward-backward asymmetry of the muon pair in semi-muonic decays of B_s , B_d , B^+ and Λ_b hadrons are also sensitive to possible phenomena beyond the SM. Several decays of these hadrons are considered by ATLAS for this measurement. The trigger strategy to be used for the study of rare B decays is introduced. Preliminary results regarding the performance of the trigger system are shown. The ATLAS strategy for measuring the branching ratio of $B_s \rightarrow \mu \mu$ is also presented, based on simulated data.

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