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Mixing and CP-violation in the Bd and Bs systems at ATLAS (10' + 5')

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Abstract: Search for deviations from the standard model is performed in the systems of the neutral B mesons. The Bs system is studied in the decay into $J/\psi \phi$. The mixing phase ϕ_s and the width difference $\Delta\Gamma_s$ are determined through the simultaneous study of angular distributions in the final state and of the decay time, performed together with flavour tagging at production. The measurement performed by ATLAS with the full LHC Run-1 sample is discussed and compared to the previous world average. The width difference $\Delta\Gamma_d$ in the Bd system is obtained from the comparison of the decay time distributions in the flavour specific state $J/\psi K^*$ and in the CP eigenstate $J/\psi K_S$. The result obtained from the full sample of data collected by ATLAS at 7 and 8 TeV is the most accurate single measurement of the width difference currently available.

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