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ATLAS measurements of CP violation and rare decay processes with beauty mesons

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The ATLAS experiment has performed measurements of B-meson rare decays proceeding via suppressed electroweak flavour changing neutral currents, and of mixing and CP violation in the neutral B_s^0 meson system. This talk will focus on the latest results from the ATLAS collaboration, such as rare processes $B_s^0 \to \mu\mu$ and $B_d^0 \to \mu\mu$ and CP violation in $B_s^0 \to J/\psi\phi$decays. In the latter, the Standard Model predicts the CP violating mixing phase, ϕ_s, to be very small and its SM value is very well constrained, while in many new physics models large ϕ_s values are expected. The latest measurements of ϕ_s and several other parameters describing the $B_s^0 \to \mu\mu$ decays will be reported.

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