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## Measurement of the weak mixing phase phi\_s through time-dependent CP violation in Bs0—>J/psi phi decay in ATLAS

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In the Standard Model of particle physics, CP violation arises due to a single complex phase in the Cabibbo–Kobayashi–Maskawa (CKM) quark mixing matrix. Testing the validity of the CKM mechanism as the only source of CP violation is one of the major experimental challenges in particle physics today. Precise measurement of the CKM parameters therefore constrains the Standard Model, and may reveal effects beyond the Standard Model. Measurement of the time–dependent decay rates of Bs0—>J/psi phi provides a theoretically clean method for extracting CP–violating weak mixing phase phi\_s. The Standard Model predicts phi\_s to be very small and it is very well constrained, while in many new physics models large phi\_s values are expected. Bs0—>J/psi phi decay channel is sensitive to the new physics contributions, and already small deviations in a measurement of phi\_s would be hints for the existence of the new particles.

The most recent results from ATLAS are presented in CP-violating mixing phase phi\_s and several other parameters describing the Bs0 meson system.

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