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CP violation in B and Bs decays

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The LHCb collaboration has recently released a number of new and updated measurements of the CP violating angles β and ϕ_s using the full 2011 and 2012 datasets. These CP violating parameters, which are sensitive to possible BSM physics, are observable in the interference between mixing and $b \rightarrow ccs$ decays of B and Bs mesons, respectively. LHCb has measured $\sin(2\beta)$ in an analysis of $B \rightarrow J/\psi KS$ and multiple measurements of ϕ_s in analyses of $B_s \rightarrow J/\psi \phi$, $B_s \rightarrow J/\psi \pi \pi$, and $B_s \rightarrow Ds Ds$. The effective angle ϕ_s is also measured in the rare decay $B_s \rightarrow \phi \phi$, which proceeds through a suppressed $b \rightarrow sss$ penguin diagram, and is thus also sensitive to new physics through the decay amplitude. Analyzing the interference between neutral meson mixing and decay necessitates a flavor-tagged lifetime analysis. This talk will present the latest results from LHCb on these channels.

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