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## Determination of the phase $\phi_s$ at LHCb

The determination of the mixing-induced CP-violating phase  $\phi_s$  in the  $B_s$ - $B_s^*$  system is one of the key goals of the LHCb experiment. It has been measured at LHCb exploiting the Run I data set and using several decay channels:  $B_s^0 \rightarrow J/\psi K^+ K^-$  and  $B_s^0 \rightarrow J/\psi \pi^+ \pi^-$ , both with  $J/\psi \rightarrow \mu^+ \mu^-$ ,  $B_s^0 \rightarrow \psi(2S) \rightarrow \mu^+ \mu^- \gamma$ . The first observation of the  $B_s^0 \rightarrow \eta_c \gamma$  and  $B_s^0 \rightarrow \eta_c \pi^+ \pi^-$  decay modes which can be used to measure  $\phi_s$  with Run2 data is presented.

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