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CPV measurement in $B_s \rightarrow \phi\phi$ decay

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A flavor-tagged time-dependent angular analysis of the decay $B_s \rightarrow \phi\phi$ is performed using pp collision data collected by the LHCb experiment at the center-of-mass energy of 13 TeV, corresponding to an integrated luminosity of 6 fb^{-1} . The CP-violating phase and direct CP-violation parameter are measured to be $\phi_s = -0.042 \pm 0.075 \pm 0.009 \text{ rad}$ and $|\lambda| = 1.004 \pm 0.030 \pm 0.009$, respectively, assuming the same values for all polarization states of the $\phi\phi$ system. This is the most precise study of time-dependent CP violation in a penguin-dominated B meson decay. The results are consistent with CP symmetry and with the Standard Model predictions.

In this presentation, I will explicitly introduce the analysis procedures implemented in this measurement, and discuss the results correspondence with the SM predictions.

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