CP violation in CMS: expected performance

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Abstract

The huge amount of $b\overline{b}$ events that will be obtained at LHC during the first years of operation will offer the possibility to study CP violation in the $B^0 - \overline{B^0}$ system. The CMS experiment can contribute significantly to the measurement of the CP violation asymmetry in the channel $B^0_d \to J/\psi K^0_S$. Recent evaluation of the expected precision on the CP violation parameter $sin2\beta$ has been performed using a full simulation of the CMS tracker including track and vertex reconstruction. CMS has also studied the possibility to test CP violation in the decay channel $B^0_s \to J/\psi\Phi$. The results of these studies will be reviewed.