



Contribution ID: 244

Type: Talk

## Measurement of CP-violating phase $\phi_s$ in the $B^0_s \rightarrow J/\psi\phi \rightarrow \mu^+\mu^-K^+K^-$ channel in pp collisions at $\sqrt{s} = 13$ TeV

Monday 12 December 2022 16:00 (15 minutes)

The measurement of CP violating weak phase  $\phi_s$  is achieved using the data collected by the CMS experiment at  $\sqrt{s} = 13$  TeV in the sample of 48500 reconstructed  $B^0_s \rightarrow J/\psi\phi \rightarrow \mu^+\mu^-K^+K^-$  events corresponding to an integrated luminosity of  $96.4\text{fb}^{-1}$ . The parameters are extracted by performing a time-dependent and flavor-tagged angular analysis of the  $\mu^+\mu^-K^+K^-$  final state.

This talk will discuss these recent results and their combination with the previous CMS measurement at  $\sqrt{s} = 8$  TeV, with particular emphasis on the adopted methodology and employed novel opposite-side muon flavor tagger based on ML techniques.

### Session

Quark and Lepton Flavour Physics

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**Session Classification:** WG8 - Quark and Lepton Flavour Physics