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Measurements of hadronic B and D decays at Belle and Belle II (20+5)

Wednesday 8 September 2021 13:00 (25 minutes)

[This talk is a combination of several submitted abstracts, including the following.]

In the Belle II experiment, we have accumulated integrated luminosity of more than 100 fb^{-1} after starting the physics data taking in 2019. It is comparable to the data sets used for the B^0 lifetime τ_{B^0} and mixing Δm_d measurements in the BABAR and Belle. To demonstrate high accuracy measurements using the decay time difference of the B^0 - $\bar{B}^0$ system which is one of the most essential inputs of the time-dependent CP violation study at the B -factory experiment, we measure τ_{B^0} and Δm_d with resolution function refined for the high-statistics data. Since most of the CP -eigenstates are not flavor non-specific, we determine the flavor of B^0 meson using the remnants based on multivariable analysis after reconstructing the signal. It is validated using the control samples of hadronic decays $B \rightarrow D^{(*)}h$ ($h = K$ or π) and effective tagging efficiency is estimated. We present results of these studies related to the CP violation measurements with high-statistics data samples. We also report about the reconstruction of the decays used for the CP violation and a measurement of the time integrated mixing parameter, χ_d .

Primary author: ZHANG, Yi

Presenter: ZHANG, Yi

Session Classification: Flavour physics - CKM and beyond

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