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Type: **Parallel Talk**

Probing CP violation in semi-leptonic decays through time-evolution

Saturday, 9 July 2022 10:08 (17 minutes)

We will discuss the time-dependent analysis of $B \rightarrow P(S)\ell\ell$ taking into account the time evolution of the B_d meson and its mixing into \bar{B}_d . The inclusion of time evolution allows us to identify six new observables. We also show that these observables could be obtained by time-integrated measurements in a hadronic environment if flavour tagging is available.

We

provide simple and precise predictions for these observables in the SM and in NP models with real contributions to SM and chirally flipped operators, which are independent of form factors and charm-loop contributions.

As such, these observables provide robust and powerful cross-checks of the New Physics scenarios currently favoured by global fits to $b \rightarrow s\ell\ell$ data.

We discuss the sensitivity of these observables with respect to NP scenarios involving CP-violating phases. This talk will be based on arXiv:2008.08000 and currently on-going works.

In-person participation

Yes

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