



Contribution ID: 8

Type: **Parallel session talk**

## New physics search via CP observables in $B_s^0 \rightarrow \phi\phi$ decays with left- and right-handed Chromomagnetic operators

*Tuesday 22 August 2023 09:04 (17 minutes)*

In this work, we investigate the time-dependent angular analysis of  $B_s^0 \rightarrow \phi\phi$  decay to search for new physics signals via CP-violating observables. We work with a new physics Hamiltonian containing both left- and right-handed Chromomagnetic dipole operators. The hierarchy of the helicity amplitudes in this model gives us a new scheme of experimental search, which is different from the ones LHCb has used in its analysis. To illustrate this new scheme, we perform a sensitivity study using two pseudo datasets generated using LHCb's measured values. We find the sensitivity of CP-violating observables to be of the order of  $5 - 7\%$  with the current LHCb statistics. Moreover, we show that Belle(II)'s  $B_d^0 \rightarrow \phi K_s$  and LHCb's  $B_s^0 \rightarrow \phi\phi$  measurements could be coupled within our model to obtain the chirality of the new physics.

### Collaboration / Activity

Phenomenology

**Primary authors:** Dr KOU, Emi (IJC Lab); KAPOOR, Tejhas (IJC Lab)**Presenter:** KAPOOR, Tejhas (IJC Lab)**Session Classification:** T08 Flavour Physics and CP Violation**Track Classification:** Flavour Physics and CP Violation