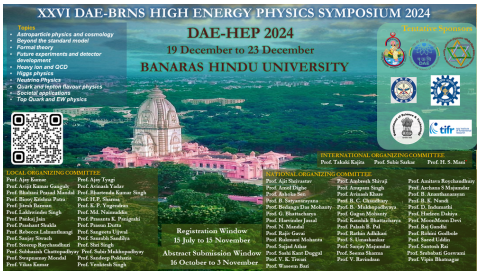

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Measurement of branching fraction, direct CP asymmetry, and longitudinal polarisation of the decay B+ -> K*+ omega at Belle II

We present preliminary MC results from a search for the decay $B^+ \to K^{*+}\omega$ using the data collected by the Belle II detector at the SuperKEKB asymmetric-energy e^+e^- collider, operating at the $\Upsilon(4S)$ resonance. This analysis focuses on the decay of B meson into two non-leptonic charmless vector mesons. The production of vector mesons in different polarization states leads to distinct polarization fractions. An enhancement in the transverse polarization fraction has been observed in penguin-dominated decays, which still remains to be understood. Investigating this decay mode experimentally is crucial, as it can significantly advance our understanding of these processes. The current experimental upper limit on the branching ratio of $B^+ \to K^{*+}\omega$ is 7.4×10^{-6} at 90% confidence level (CL), which was set by the BaBar collaboration. BaBar also measured the longitudinal polarization fraction of this decay to be 0.41 ± 0.18. This analysis will be the first attempt to search for this decay mode and aim to measure the branching fraction, direct CP asymmetry, and longitudinal polarization using the Belle and Belle II dataset.

Field of contribution

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