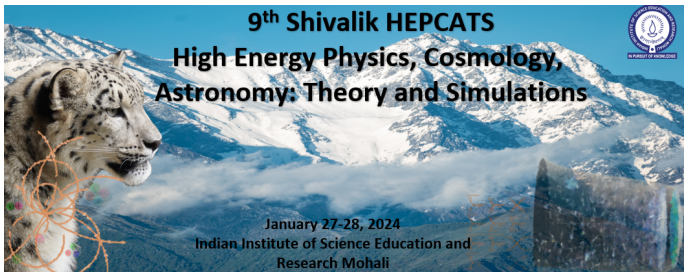

Contribution ID: **4** Type: **not specified**

Discovery of rare decay modes at the Belle and Belle II experiment.

We will present the study of rare decay modes B+ ⟶ Ds*+h0 and B+ ⟶ D+h0, where h0 denotes the neutral mesons (η and K0) using a data sample of the Belle experiment. These rare decay modes are poorly measured in the world, and we first time studied them using the full Belle data collected at an asymmetric KEKB e+e- collider situated at Tsukuba, Japan. Along with rare decay modes, we will report improved measurements in the branching fraction of the color-suppressed decays B0 ⟶ D0 h0. We will also present the sensitivity study of B0−>D_{s}ˆ{0}/piˆ{0} modes with the Belle and Belle II experiment.
In the absence of a significant signal yield, an upper limit at the 90% confidence level is given for each signal decay mode. We present the first search result for the B+⟶D+η decay mode. The obtained upper limits are 20 times more stringent than the previous one. We report the most precise measurement to date of the branching fraction for the B0⟶D0 K0 decay mode.

Primary author: KUMAR, Manish (Department of Physical Sciences, IISER Mohali)

Co-author: Dr BHARDWAJ, Vishal (IISER Mohali)

Presenter: KUMAR, Manish (Department of Physical Sciences, IISER Mohali)