



Contribution ID: 46

Type: Poster

## Analysing the S-wave charmonium decays of $B_c$ meson

Tuesday 13 December 2022 14:00 (1 hour)

This talk will discuss the semi-leptonic and non-leptonic  $B_c$  meson decay into S-wave charmonium and present our results. This analysis has been done in the non-relativistic QCD(NRQCD) framework. We used Heavy-Quark Spin Symmetry (HQSS) to relate the  $B_c \rightarrow \eta_c$  to the  $B_c \rightarrow J/\psi$  form factors. Furthermore, the information on  $B_c \rightarrow \eta_c$  form factors were extracted from available information on  $B_c \rightarrow J/\psi$  form factors from the lattice. We then predict the observables  $R(J/\psi)$  and  $R(\eta_c)$  along with their NP predictions for these observables. Several other predictions are related to  $e^+e^-$ , Higgs, and Z- decay to single or double charmonium and radiative modes involving  $J/\psi$  and(or)  $\eta_c$  also presented here.

### Session

Quark and Lepton Flavour Physics

**Primary authors:** SAHOO, Shantanu (IIT Guwahati); Dr NANDI, Soumitra (IIT Guwahati); Dr BISWAS, Aritra

**Presenter:** SAHOO, Shantanu (IIT Guwahati)

**Session Classification:** Poster - 2