Contribution ID: **897**                                        Type: **Parallel session talk**

# Constraints on New Physics couplings from ⊠→⊠* (⊠ ⊠) ℓ ⊠ analysis

*Friday 19 July 2024 16:45 (17 minutes)*

The Belle Collaboration recently measured the complete set of angular coefficient functions for the exclusive decays $\bar{B} \to D^*(D\pi)\ell\bar{\nu}_\ell$, where $\ell = e, \mu$, into four bins of the parameter $w = \frac{m_B^2 + m_{D^*}^2 - q^2}{2m_B m_{D^*}}$, with $q$ representing the momentum of the lepton pair. In SM these measurements are instrumental in determining the hadronic form factors governing the $B \to D^*$ matrix elements of the SM weak current, thereby refining the estimation of $|V_{cb}|$. On the other hand, they can be used to assess the impact of possible new physics contributions. We extend the SM effective Hamiltonian that governs this mode by incorporating the complete set of Lorentz invariant $d = 6$ operators compatible with the gauge symmetry of the theory. The measured angular coefficient functions play a pivotal role in constraining the couplings within the generalized Hamiltonian.

## Alternate track

1. Quark and Lepton Flavour Physics

## I read the instructions above

Yes

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**Session Classification:**   Beyond the Standard Model

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