



Contribution ID: 539

Type: Oral

Dark Z and dark photon effects on $B_c \rightarrow D_s^{(*)} \mu^+ \mu^- (\nu_\ell \bar{\nu}_\ell)$ decay modes

We explore the role of dark matter in connection with flavor physics by using the dark force carriers, dark Z and dark photon. We perform a global fit to the new parameters using existing data on $b \rightarrow s \mu^+ \mu^-$ transitions. With these constrained parameters, we examine the improvements in the branching ratios and angular observables of the semileptonic $B_c \rightarrow D_s^{(*)} \mu^+ \mu^- (\nu_\ell \bar{\nu}_\ell)$ decay modes relative to Standard Model predictions.

Field of contribution

Phenomenology

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