Contribution ID: **1281** Type: **Parallel session talk**

Short- vs long-distance dynamics in b->sll decays

Friday 19 July 2024 14:45 (15 minutes)

The tension of $B \to K^{(*)}\bar{\ell}\ell$ decays with the Standard Model (SM) can be attributed to a short-distance (SD) $bs\bar{\ell}\ell$ interaction.
We show two methods to disentangle this effect from long-distance (LD) dynamics. Firstly, we do a comparison of the inclusive $b \to s\bar{\ell}\ell$ rate at high $q^2 = m^2_{\ell\ell} \geq 15\ \mathrm{GeV}^2$ with a determination based on data on the leading exclusive modes, finding a $\sim 2\sigma$ discrepancy. Secondly, we do a data-driven analysis of the exclusive $B \to K^{(*)}\bar{\ell}\ell$ spectrum in the entire q^2 region. With a dispersive parametrization of the charmonia resonances, we extract the non-SM contribution to the Wilson coefficient C_9 for every bin in q^2. The result is compatible with the SD hypothesis and the inclusive determination. Finally, with the aim of having a better control over LD effects that mimic the C_9 contribution, we give an estimate of the size of charm-rescattering processes in $B \to K\bar{\ell}\ell$.

Alternate track

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Yes

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Session Classification: Quark and Lepton Flavour Physics

Track Classification: 05. Quark and Lepton Flavour Physics