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Impact of Soft Photons on $B \to K\ell^+\ell^-$

Thursday, June 10, 2021 6:45 PM (1 hour)

In this talk, we will be discussing $\mathcal{O}(\alpha)$ QED corrections to $B \to K\ell^+\ell^-$ modes. The structure of the contact term is fixed by requiring the gauge invariance of the real emission amplitude. The calculation is done by providing fictitious mass (λ) to the photon, which acts as IR regulator and results are shown to be independent of it. QED effects are found to be negative. Electron channels are shown to receive large correction $\mathcal{O}(20\%)$. We will also discuss its impact on lepton flavour universality (LFU) ratio ($R_K^{\mu e}$).

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