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## Linking $R_{K^{(*)}}$ anomalies to $H_0$ tension via Dirac neutrino

The recently updated measurements from LHCb have strengthened the deviation of  $R_K$ , implying a stronger hint at new physics beyond the Standard Model. We show in this paper that, the long-standing  $R_{K^{(*)}}$  anomalies can be explained by Dirac neutrinos embedded in a two-Higgs-doublet model. The explanation induces a thermalized right-handed Dirac neutrino in the early Universe, which contributes as extra radiation to the Hubble expansion and prompts a shift of the effective neutrino number,  $N_{eff}$ . In mimicking the favored scenarios for solving the Hubble ( $H_0$ ) tension, we show that the simultaneous explanation of  $R_{K^{(*)}}$  and  $H_0$  via one-flavor right-handed Dirac neutrino can be readily tested or ruled out by the upcoming  $H_0$  confirmation.

## **Presentation type**

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