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Test of the $R(D^{(*)})$ anomaly at the LHC

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There are discrepancies between the experimental results and the Standard Model predictions, in the lepton flavor universality of the semileptonic B decays: $B¥toD^{(*)}¥ell¥nu$. As the new physics interpretations, new charged vector and charged scalar fields, that dominantly couple to the second and third generations, have been widely discussed. In this work, we study the signals of the new particles at the LHC, and test the interpretations via the direct search for the new resonances. In particular, we see that the $¥tau¥nu$ resonance search at the LHC has already covered most of the parameter regions favored by the Belle and BaBar experiments. We find that the bound is already stronger than the one from the B_c decay depending on the mass of charged scalar. This talk is based on arXiv:1810.05843.

Presenter: IGURO, Syuhei (Nagoya University)

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