

BelleII excess & Muon $g-2$ illuminating Light DM with Higgs Portal

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The Belle II collaboration recently announced that they observed the $B \rightarrow K \nu \nu$ decay process for the first time. However, their result encounters a 2.7σ deviation from the Standard Model calculation. Additionally, Fermilab released new data on muon $g-2$ away from the SM expectation with 5.1σ . In this talk, I would like to talk about the simplest UV-complete $U(1)_{L\mu-L\tau}$ -charged complex scalar Dark Matter model. Thanks to the existence of light dark Higgs boson and light dark photon, I can explain the observed relic density of DM and resolve the results reported by both Belle II and Fermilab experiments simultaneously. As a byproduct, the Hubble tension can be alleviated.

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