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SEMINAR ZAVODA ZA TEORIJSKU FIZIKU

RBI-T-WINNING seminari



Lepton Flavor Universality Violation: Window to physics beyond the Standard Model

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Abstract:

Recently observed discrepancies between the Standard model theory and the experimental measurements of semileptonic B -meson decays indicate the violation of one of the basic premisses of the Standard Model: lepton flavor universality. Such deviations are observed in both the decays mediated by charged currents and those by flavor changing neutral ones. I will explain the origin of the discrepancies and based on the effective field theory approach, I will identify the sources of physics beyond the Standard Model. I will then review the scenarios beyond the Standard Model capable of accommodating the above-mentioned deviations and propose a viable scenario which entails only two $\mathcal{O}(1 \text{ TeV})$ scalar leptoquarks beyond the Standard Model. Curiously that scenario allows for a $SU(5)$ unification.

Voditelj seminara:
Anđelo Samsarov