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Direct CP violation in K-> pi pi decays and supersymmetry (15' + 5')

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New lattice QCD results from the RBC-UKQCD collaboration have opened the door for a reliable theory analysis of ϵ'_K, which quantifies direct CP violation in $K \to \pi\pi$ decays. The Standard-Model (SM) prediction disagrees with the measurement by 2.9 standard deviations. While in most models of new physics the data on indirect CP violation (characterized by the well-understood quantity ϵ_K) preclude sizable effects in ϵ'_K, large effects are possible in the Minimal Supersymmetric Standard Model.

Primary author: NIERSTE, Ulrich (KIT)

Presenter: NIERSTE, Ulrich (KIT)

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