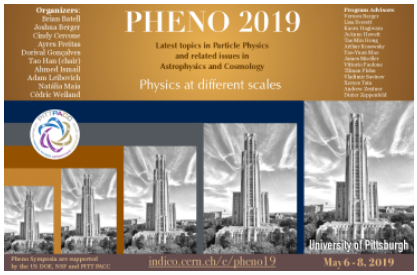

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Invisible widths of heavy mesons

Tuesday 7 May 2019 18:15 (15 minutes)

We revisit calculations of invisible widths of heavy mesons in the standard model, which serve as benchmarks for the studies of production of light, long-lived neutral particles in heavy meson decays. We challenge the common assumption that in the standard model these widths are dominated by meson decays into a two-neutrino final state and prove that they are dominated by decays into fourneutrino final states. We show that current estimates of the invisible widths of heavy mesons in the standard model underestimate the effect by orders of magnitude. We examine currently available experimental data on invisible widths and place constraints on the properties of dark photons. We also comment on the invisible widths of the kaons.

Summary

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