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The axion-photon coupling from lattice QCD

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The QCD axion is one of the most promising solutions to the strong CP problem, as it is also a viable dark matter candidate. Moreover, a large fraction of the current experimental searches focus on its coupling to photons. In this talk, we present the first determination of the QCD corrections to the model-independent part of the axion–photon coupling from a first-principles lattice QCD calculation. The continuum limit is taken with two independent methods to ensure the robustness of the result. Using our result for the coupling, we update the current theoretical and experimental bounds in the coupling-mass plane.

Parallel Session (for talks only)

Theoretical developments and applications beyond Standard Model

Authors: BRANDT, Bastian (University of Bielefeld); Prof. ENDRŐDI, Gergely (Eötvös Loránd University); HERNÁNDEZ HERNÁNDEZ, José Javier (University of Bielefeld); Dr MARKÓ, Gergely (Eötvös Loránd University); Dr PANNULLO, Laurin (University of Bielefeld)

Presenter: HERNÁNDEZ HERNÁNDEZ, José Javier (University of Bielefeld)

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