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Theoretical motivations for a light boson and its phenomenology

Abstract

The physics beyond the Standard Model (BSM) could be represented by a hidden sector at relatively low energy scales and feeble couplings to SM. The presence of light bosons related to this hidden sector in our Universe could be revealed both through direct detection and indirect evidences over cosmological and astrophysical considerations. Here, I give an overview of these BSM models including axions and hidden photons and discuss future progresses.