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Charmed mesons in the extended Linear Sigma Model

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Collaboration

Abstract content

We enlarge the so-called Extended Linear Sigma Model (eLSM) by including the charm quark according to the global U(4)rxU(4)l global chiral symmetry. In the eLSM, besides scalar and pseudoscalar mesons, also vector and axial-vector mesons are present. Almost all the parameters of the model were fixed in a previous study of mesons below 2 GeV. In the extension to the four-flavor case, only three additional parameters (all of them related to the bare mass of the charm quark) appear. We then compute the masses, weak decay constants and (OZI dominant) strong decays of open and hidden charmed mesons. The results are in good agreement with the experimental data.

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