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Scattering of Dark Pions in an Sp(4) gauge theory

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We consider strongly interacting dark matter candidates as composite states of Nf=2 fermions charged under a dark Sp(4) gauge group in the fundamental representation. We give expressions that allow the calculation of correlation functions of two pseudo-Nambu-Goldstone-bosons with lattice field theory and present first results on the scattering phase shift in the isospin-2 channel in the theory from first principles. We give a lower limit on the dark matter particle mass by comparing our results with astrophysical constraints on the cross-section.

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