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Meson spectrum of $Sp(4)$ lattice gauge theory with two fundamental Dirac fermions

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We calculate the meson spectrum of $Sp(4)$ lattice gauge theory coupled to two fundamental flavors of dynamical Dirac fermions, where we focus on the lowest (flavored) spin-0 and spin-1 states. Such theories are often considered in the phenomenological models of composite Higgs and self-interacting dark matter. We carry out continuum extrapolations using four different values of lattice couplings, and fit the resulting masses and decay constants to effective field theory. Our results are then compared with quenched ones and those of other similar gauge theories.

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