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Radiative contribution to the effective potential in a composite Higgs model

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The $SU(4)$ gauge theory with two flavors of Dirac fermions in the sextet representation shares features of a candidate for a composite Higgs model. The analogue of the Higgs multiplet of the Standard Model lives in the Goldstone manifold resulting from spontaneous breaking of the global symmetry $SU(4)$ to $SO(4)$. The Higgs potential arises from interaction with the particles of the Standard Model. We have computed the gauge boson contribution to the Higgs potential, using valence overlap fermions on a Wilson-clover sea. The calculation is similar to that of the electromagnetic mass splitting of the pion multiplet in QCD.

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