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Properties of a Two-Dimensional Scalar Field Theory with a ϕ^4 Interaction¹ SHREERAM JAWADEKAR, MAMOON SHARAF, MENG YAO HUANG, JAMES VARY, Iowa State University — We investigate properties of a two-dimensional scalar field theory with a ϕ^4 interaction in the broken phase using the method of Discretized Light-Cone Quantization (DLCQ). Our goal is to extrapolate the critical coupling for vanishing mass gap (with respect to the perturbative vacuum) to infinite longitudinal momentum K in the odd particle sector, the even particle sector, and the degenerate mass of the odd and even sectors of DLCQ. We will present results with both periodic and anti-periodic boundary conditions to elicit effects of neglecting the zero mode in the periodic case.

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