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XQED(3) : Non-compact QED(3) with an added four-fermi interaction IOANNIS TZILIGAKIS, University of Illinois, Urbana-Champaign — Non-compact QED with an extra weak four-fermion term (aka XQED) is simulated in 2+1 dimensions. Approaches based on Schwinger- Dyson studies, arguments based on thermodynamic inequalities and numerical studies lead to estimates of the critical number of fermion flavors (below which chiral symmetry is broken) ranging from $N_{fc} = 1$ to $N_{fc} = 4$. The weak four-fermion coupling is irrelevant in the continuum thus it provides the framework for an improved algorithm, allowing us to simulate the chiral limit of massless fermions. We present results of a first round of simulations.

Ioannis Tziligakis
University of Illinois, Urbana-Champaign

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