Simulation Results of QED in a Non-commutative Spacetime

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Abstract: We present numerical results for simulations of QED on a noncommutative space. The theory is translated to a dimensionally reduced matrix model, which renders the numerical treatment of this model feasible. In particular, we present data pertaining to the scaling of various observables in the simultaneous continuum/infinite volume limit at fixed non-commutativity. This will allow us to set a scale, thus laying ground for further investigation of this model. Eventually we hope to make contact with experimental data for the photon dispersion relation.