1085-81-159 **A. Pizzo*** (pizzo@math.ucdavis.edu) and **D. A. Deckert** (deckert@math.ucdavis.edu).
Ultraviolet properties of the spinless, one-particle Yukawa model.

We consider the one-particle sector of the spinless Yukawa model, which describes the interaction of a nucleon with a real field of scalar massive bosons (neutral mesons). The nucleon as well as the mesons have relativistic dispersion relations. In this model we study the dependence of the nucleon mass shell on the ultraviolet cut-off Λ. For any finite ultraviolet cut-off the nucleon one-particle states are constructed in a bounded region of the energy-momentum space. We identify the dependence of the ground state energy on Λ and the coupling constant. More importantly, we show that the model considered here becomes essentially trivial in the limit $\Lambda \to \infty$ regardless of any (nucleon) mass and self-energy renormalization. Our results hold in the small coupling regime. This is a joint work with D.-A. Deckert. (Received September 07, 2012)