

Renormalization of Dirac's polarized vacuum

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In this talk I will review several results on a model describing relativistic atoms while taking into account some QED effects like the polarization of the vacuum.

I will first present the model and recall previous results, mainly dealing with the existence of ground states and their properties (joint works with Gravejat, Hainzl, Séré and Solovej).

Then, I will explain how to remove the ultraviolet cut-off by means of a renormalization procedure, following a recent work with Gravejat and Séré.