The Muon Magnetic Moment in a Model of Lepton Structure

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In this note we calculate the magnetic moment form factor for the muon, according to a recently proposed model of lepton structure.

Nesta nota, calculamos o fator de forma do momento magnético do muon, de acordo com um modelo recentemente proposto para a estrutura do lepton.

1. INTRODUCTION

In this note, we calculate the muon magnetic moment according to the model of lepton structure which has been recently proposed[1,2,3].

The basic feature of this model is to consider leptons and hadrons on the same level, since they are both observables. As hadrons seem to be composite of quarks, a quark structure for the leptons (e, μ) with the inclusion of neutral leptons, was suggested[1].

In order to account for the non-observation of such interactions at the known energies, it was then proposed[2] that the neutral leptons are heavy and that the charged leptons may interact with mesons according to a Lagrangian which has a mixture of scalar and pseudoscalar couplings, of the type: