Magnetic moment and form factors of a composite system in a solvable potential model

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ABSTRACT:
The momentum-transfer (Q) dependence of the electromagnetic form factor is calculated for the charged-fermion–neutral-scalar system in a potential model. The magnetic moment has a major contribution similar to the static bag-model value. Two additional corrections have opposite signs. Their near cancellation is connected with the proper description of the photon vertex. The same description, together with the integration measure deduced from the quasipotential formalism, leads to a form factor which has as low rate of decrease with high-Q values as suggested by the experimental data. This investigation, based on an explicitly solvable model, might give some useful hints for the treatment of the more complex systems.