Angular Momentum Decomposition in QED and QCD

HIKMAT B.C., MATTHIAS BURKARDT, NMSU — We calculate the orbital angular momentum of the “quark” in the scalar diquark model as well as that of the electron in QED (to order $\alpha$). We compare the orbital angular momentum obtained from the Jaffe-Manohar decomposition to that obtained from the Ji relation and estimate the importance of the vector potential in the definition of orbital angular momentum.