

Finite width corrections to the EM multipoles of spin-1 particles

Thursday, 11 November 2010 16:30 (0:30)

Abstract content

The inclusion of the unstable features of a spin-1 particle, without breaking the electromagnetic gauge invariance, can be properly accomplished by including higher order contributions. This induces a nontrivial modification to the electromagnetic vertex of the particle, which must be considered in addition to any other contribution computed as stable particles. Considering the modified electromagnetic vertex, we obtain general expressions for the corresponding corrections to the multipoles as a function of the mass of the particles in the loop. For the W gauge boson no substantial deviations from the stable case are observed. For the rho and K^* mesons the mass of the particles in the loop has a significant effect, and can be comparable with corrections of a different nature.

Summary

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Session Classification : Session II H.NP.P

Track Classification : Hadronic and non-perturbative physics