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Comments on the pair creation model for strong decays

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Abstract

We present a new form of the pair creation model for strong decay based on a relativistic form of the bound state wave functions written as products of individual wave functions with correlated arguments. Observing that the vacuum-like quark-antiquark pairs are intrinsically contained in the relativistic bound state wave function the decay amplitudes are written as projections of the initial wave function on the product of the final ones and as a result the decay appears as a spontaneous, nonperturbative effect. The model is applied to the ρ and ω decays in two and three pions respectively.

Keywords: bound states, relativistic wave equations, strong decay.

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