Heavy quark system in external field

Professor Su Houngr Lee
Department of Physics Yonsei University, Seoul, Korea

Abstract:

We investigate the properties of charmonia in strong magnetic fields by using QCD sum rules. We show how to implement the mixing effects between $\eta_c$ and $J/\psi$ on the basis of field-theoretical approaches, and then show that the sum rules are saturated by the mixing effects with phenomenologically determined parameters. Consequently, we find that the mixing effects are the dominant contribution to the mass shifts of the static charmonia in strong magnetic fields.

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