



Contribution ID: 83

Type: **Talk**

Polarizability of pseudoscalar mesons from the lattice calculations

Friday, July 29, 2016 4:50 PM (20 minutes)

We explore the ground state energy of pseudoscalar charged and neutral mesons as a function of external magnetic field in SU(3) lattice gauge theory. We calculate the dipole magnetic polarizabilities and hyperpolarizabilities of charged and neutral pseudoscalar pi and K mesons. It was found that the magnetic polarizability of charged pion agrees with the experimental prediction of COMPASS collaboration.

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Session Classification: Hadron Structure

Track Classification: Hadron Structure