

Magnetic Polarisability with the background Field Method

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The magnetic polarisability is a fundamental property of hadrons, which provides insight into their structure in the low-energy regime. The pion magnetic polarisability is calculated using lattice QCD in the presence of background magnetic fields. The results presented are facilitated by the introduction of a new magnetic-field dependent quark-propagator eigenmode projector and the use of the background-field corrected clover fermion action. The magnetic polarisabilities are calculated in a relativistic formalism, and the excellent signal-to-noise property of pion correlation functions facilitates precise values.

Primary author: BIGNELL (*), Ryan (University of Adelaide)

Co-authors: LEINWEBER, Derek; KAMLEH, Waseem

Presenter: BIGNELL (*), Ryan (University of Adelaide)

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