Light-Cone 2024: Hadron Physics in the EIC era



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Gravity as a probe of hadron structure

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The energy momentum tensor (EMT) matrix elements appear in the moments of various parton distributions. The external gravity coupling to EMT provide the constraints to hadron structure due to equivalence principle, This provides the complementary aspect of Ji's sum rules and the possibility of its tests in the experiments with precise measurements of spin precession.

The notion of equivalence principle may be (approximately) valid for quarks and gluons separately. Such extension is discussed for tensor spin structure functions and Generalized Distribution Amplitudes of exotic hybrid mesons. The possible small violation of such an extension in the latter case may be related to the smallness of viscosity of quark-gluon matter, .

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