

XVth Quark Confinement and the Hadron Spectrum



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Gluonic Energy-Momentum Tensor Form Factors of the Proton

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The gravitational form factors (GFFs) describe the fundamental structure of nucleons and nuclei through the matrix element of the energy-momentum tensor. Their Fourier transform allows a description of the spatial distribution of mass, angular momentum, pressure, and shear force densities for both quarks and gluons in the nucleon. In this presentation, I will focus on the recent results of the J/ψ photoproduction near-threshold on the proton at Jefferson Lab to determine the elusive *gluonic* gravitational form factors (gGFFs) using data from both J/ψ decay channels, electronic and muonic. We'll discuss the caveats of the extraction of these gluonic GFFs in the threshold region and how to validate this extraction with the future SoLID J/ψ and the EIC Υ measurements. Both would enable future measurements critical to access the trace anomaly and gain insight into the origin of the nucleon mass

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