

3D EMT distributions as an Abel image of 2D EMT distributions on the light front

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The matrix elements of the energy momentum tensor (EMT) between plane wave states define gravitational form factors (GFFs) which provide information about spatial distribution of energy, momentum and angular momentum. The Druck gravitational form factor is related to the mechanical stability of the nucleon and gives information about the spatial distributions of the forces inside the hadron. In this work we study the GFFs in the framework of the light front quark diquark model (LFQDM). The model has been successful to derive various properties of protons. We investigate the three dimensional spatial distributions of protons as an Abel image of 2D distributions in LFQDM. We explicitly show the global and local stability conditions which are satisfied by both 2D and 3D distributions in LFQDM. We compare our results with chiral quark soliton model and lattice data.

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No

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