## Light-Cone 2024: Hadron Physics in the EIC era



Contribution ID: 92

Type: Oral

## The D-term of the proton with basis light-front quantization

Tuesday, 26 November 2024 16:00 (30 minutes)

We compute the gravitational form factors (GFFs) and study their applications for the description of the mechanical properties such as the pressure, shear force distributions, and the mechanical radius of the proton from its light-front wave functions (LFWFs) based on basis light-front quantization (BLFQ). We find acceptable agreement between our BLFQ computations and the lattice QCD for the GFFs. Our *D*-term form factor also agrees well with the extracted data from the deeply virtual Compton scattering experiments at Jefferson Lab, and the results of different phenomenological models. The distributions of pressures and shear forces are similar to those from different models.

**Primary author:** NAIR, Sreeraj (The Institute of Modern Physics (IMP) of the Chinese Academy of Sciences)

**Co-authors:** MUKHERJEE, Asmita (Indian Institute of Technology Bombay, India); MONDAL, Chandan (Institute of Modern Physics, Chinese Academy of Sciences); VARY, James and Dr. Hildegard (Iowa State University); XU, Siqi; ZHAO, Xingbo (Institute of Modern Physics, Chinese Academy of Sciences)

Presenter: NAIR, Sreeraj (The Institute of Modern Physics (IMP) of the Chinese Academy of Sciences)

Session Classification: Parallel-1