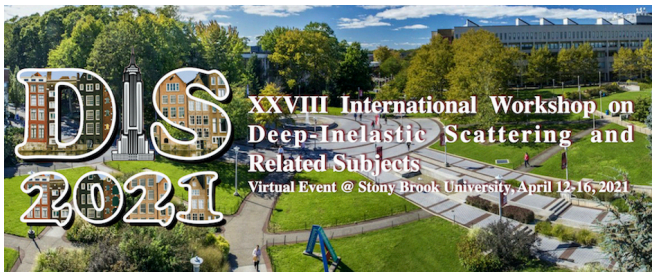

Contribution ID: **450** Type: **Contributed Talk**

Phenomenological assessment of proton mechanical properties from DVCS data

Thursday, 15 April 2021 08:18 (18 minutes)

A unique feature of generalised parton distributions (GPDs) is their relation to the QCD energy-momentum tensor. In particular, GPDs provide access to the mechanical properties of the proton i.e. the distributions of pressure and shear stress induced by the partonic structure. In principle, these distributions can be experimentally determined in a model-independent way from the subtraction constant obtained in a dispersive analysis of deeply virtual Compton scattering (DVCS) amplitudes. In practice, the kinematic coverage and accuracy of existing experimental data make this endeavour a challenge.

Elaborating on recent global fits of deeply virtual Compton scattering measurements using artificial neural networks, our analysis presents the current knowledge on the subtraction constant and assesses the impact of the most frequent systematic assumptions made in this field of research.

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Session Classification: Spin Physics

Track Classification: Spin Physics