Contribution ID: **162** Type: **Oral**

Transition Generalised Parton Distributions for the Nucleon to Low-lying Excited States

Wednesday 21 August 2024 17:50 (20 minutes)

Generalised parton distributions promise to expand our understanding of the behaviour of the elementary quarks and gluons into three dimensions. They provide us with a framework for describing the position of the quarks and gluons as well as how they divide the hadron's momentum between them. This is an exciting research frontier to be investigated at Jefferson Lab as well as the future Electron-Ion Collider. We use a model for the GPDs to study the cross section for a ground-state nucleon transitioning into a low-energy excited state described as a molecular state, rather than as a simple excitation of a three-quark system. In this way we expect to gain new insight into the makeup of low-lying hadronic resonances.

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Session Classification: Nuclear and Astro-particle Physics

Track Classification: B: Light Quarks