

Abstract Submitted
for the APR20 Meeting of
The American Physical Society

Deep Neural Network extraction of Compton Form Factors from DVCS data JAKE GRIGSBY, BRANDON KRIESTEN, SIMONETTA LIUTI, University of Virginia — With the rapid development of new nuclear physics programs aimed at studying the 3D structure of nucleons, the use of more advanced data analysis tools becomes crucial. We present an application of recent machine learning techniques for the extraction of Compton Form Factors. A Deep Neural Network learns to map kinematic variables to form factors by fitting against observables measured in deeply virtual Compton scattering experiments. The predictive power of neural network analysis is used to highlight kinematic regions where new data should be gathered to efficiently study the physical properties of the nucleon such as partonic angular momentum. We also include an open source software package to encourage continued development of these techniques as new data is collected.

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Date submitted: 09 Jan 2020

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