

Abstract Submitted
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Peripheral Transverse Densities of the Nucleon in a Chiral-Parton Approach to Isovector Form Factors CARLOS GRANADOS, CHRISTIAN WEISS, Jefferson Lab — We calculate the nucleon's isovector electromagnetic and gravitational form factors using leading time ordered diagrams in the infinite momentum frame. These form factors can be written as overlaps of nucleon-pion light-cone wave-functions of the nucleon plus, in the case of electromagnetic form factors, a non-partonic contact term. We demonstrate also that through Fourier transforms, these form factors are related to transverse charge densities of the nucleon that are calculable in the nucleon's periphery using an isovector pion-nucleon coupling when calculating wave functions. It is found that these transverse densities are suppressed exponentially at large distances by powers that grow with the pion's longitudinal momentum. Both, electromagnetic and gravitational form factors along with the corresponding transverse densities in this partonic approach will further characterize the chiral contribution to the nucleon's internal orbital angular momentum.

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