

Abstract Submitted
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Charge form factor and sum rules of electromagnetic response functions in Carbon-12¹ ALESSANDRO LOVATO, Argonne National Laboratory — I will present the Green's function Monte Carlo (GFMC) calculation, based on realistic nuclear potentials and electromagnetic currents, of the Carbon-12 elastic form factor and sum rules of longitudinal and transverse response functions measured in inclusive (e, e') scattering. The longitudinal elastic form factor and sum rule are found to be in satisfactory agreement with available experimental data. A direct comparison between theory and experiment is difficult for the transverse sum rule. However, it is shown that the calculated one has large contributions from two-body currents, indicating that these mechanisms lead to a significant enhancement of the quasi-elastic transverse response. This fact may have implications for the anomaly observed in recent neutrino quasi-elastic charge-changing scattering data off Carbon-12.

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