

PR12-17-012: *Partonic Structure of Light Nuclei*

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This proposal is to measure deeply virtual Compton scattering (DVCS) and deeply virtual meson production (DVMP) from ^4He with the final state ^4He measured with the ALERT detector. Since ^4He has spin 0, the number of possible structure functions is reduced to one which simplifies the analysis of the experiment. DVCS will allow the extraction of quark GPD's for ^4He while DVMP of a ϕ meson allows the gluonic distribution to be accessed. There appears to be no unusual theory problems with this experiment. The production quark and gluon distributions for the nucleus rather than just a constituent nucleon eliminates the need to make any assumptions about the character of nucleons in the nucleus and would provide some very interesting results. I would recommend that this proposed experiment be approved to run as part of its associated run group.