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Quasielastic Transverse and Longitudinal Response Functions in the range $0.55 \text{ GeV}/c \leq |\vec{q}| \leq 1.0 \text{ GeV}/c$ ¹ MICHAEL PAOLONE, Temple University, JLAB HALL A E05-110 COLLABORATION — In order to determine the Coulomb sum in nuclei, a precision measurement of inclusive electron scattering cross sections in the quasi-elastic region was performed at Jefferson Lab. Incident electrons with energies ranging from 0.4 GeV to 4 GeV scattered from ^4He , ^{12}C , ^{56}Fe and ^{208}Pb nuclei at four scattering angles ($15^\circ, 60^\circ, 90^\circ, 120^\circ$) and scattered energies ranging from 0.1 GeV to 4 GeV. The Rosenbluth separation method is used to extract the transverse and longitudinal response functions at three-momentum transfers in the range $0.55 \text{ GeV}/c \leq |\vec{q}| \leq 1.0 \text{ GeV}/c$. The Coulomb Sum is obtained for ^{56}Fe and ^{12}C , and compared to predictions. We will discuss the impact of our results on short range nucleon-nucleon correlations and the possible modification of the nucleon electromagnetic properties in the nuclear medium.

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