

Abstract Submitted  
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**Precision measurement of longitudinal and transverse response function of quasielastic electron scattering in the momentum transfer range  $0.55 \text{ GeV}/c \leq |\vec{q}| \leq 1.0 \text{ GeV}/c$**  KAI JIN, Univ of Virginia — To test the Coulomb Sum Rule in nuclei, a precision measurement of inclusive electron scattering cross sections in the quasi-elastic region was performed at Jefferson Lab. Incident electrons with energy ranging from 0.4 GeV to 4 GeV, are scattered from He, C, Fe, and 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 determined in the same  $|\vec{q}|$  range and compared to predictions. We will discuss the impact of our result on short range correlations and possible modification of the nucleon magnetic properties in the nuclear medium.

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