

Kaon Structure at Low Photon Virtuality

One of the long standing questions in the standard model of particle physics is the origin of nucleon mass, spin, and the charge and density spatial distributions within. In the theory of the strong interaction, the structure of the nucleon is described by form factors which can be accessed through hard exclusive meson production. The main focus of this study is to measure the form factor of one of the lightest mesons and simplest bound state of a quark and antiquark, the kaon. The kaon form factor is measured indirectly from the scattering of a high-intensity electron beam on a proton target producing a kaon along with the Λ and Σ baryons. The data analyzed here were taken at a photon virtuality of $Q^2 = 0.5 \text{ GeV}^2$ using the high precision Hall C spectrometers of the Jefferson Lab. We will be presenting preliminary results on Λ and Σ production cross sections, separated according to the polarizations of the exchanged virtual photon.

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