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Kaon Transverse Charge Density from Space- and Time-like Data[1] NICHOLAS MECHOLSKY, JOHANN MEIJA-OTT, MARCO CARMIGNOTTO, Catholic Univ of America, TANJA HORN, Catholic Univ of America and Thomas Jefferson National Accelerator Facility, GERALD MILLER, University of Washington, IAN PEGG, LORENZO RESCA, Catholic Univ of America — Measurements of electromagnetic form factors play an important role in our understanding of the structure and interactions of hadrons based on the principles of QCD. Transverse charge densities provide a framework for the interpretation of these form factors in terms of the physical charge and magnetization densities. They are obtained as two-dimensional Fourier transforms of the elastic form factors and describe the distribution of charge and magnetization in the plane transverse to the propagation direction of a fast moving nucleon. They are related to the Generalized Parton distributions (GPDs), which are expected to provide a universal (process-independent) description of the nucleon. The simplest hadronic system that also includes a heavier strange quark is the kaon, whose valence structure is a bound state of a quark and an antiquark. Its elastic electromagnetic structure is parameterized by a single form factor. Recent calculations suggest that strange quarks play a large role in, e.g., the shape of the parton distribution amplitude, making studies of the kaons internal structure of the kaon even more important. I will present the first extraction of the kaon transverse charge density from timelike and spacelike data including new data at high center of mass energies.

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