Relativistic Effects in First Order Three-Body Calculations\textsuperscript{1} T. LIN, CH. ELSTER, Ohio University, W. POLYZOU, U. Iowa, W. GLOECKLE, Ruhr-Univ. Bochum — The Faddeev equation for three-body scattering including relativistic features is directly formulated in momentum space without employing the partial wave decomposition. Based on a Malfliet-Tjon-type potential, the observables of three-body scattering are calculated in first order. The relativistic features considered are kinematics and boost effects, and are examined within the framework of Poincaré invariant quantum mechanics. Differential cross sections for elastic and break-up scattering are calculated at selected energies up the GeV scale and compared to the corresponding nonrelativistic cross sections.

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