

Abstract Submitted
for the DNP06 Meeting of
The American Physical Society

Relativistic Effects in First Order Three-Body Calculations¹ 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.

¹Supported by the U.S. Department of Energy.

Charlotte Elster
Ohio University

Date submitted: 05 Jul 2006

Electronic form version 1.4