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Charged Current Interactions and the Jet Trigger — •Biljana Vujičić[1], A. Aktas[2], J. Bracinik[1], C. Braquet[1], A. Dubak[1], M. Fras[1], W. Haberer[1], C. Kiesling[1], M. Klug[1], A. Nikiforov[1], A. Perieanu[2], and A. Wassatsch[1] — [1]Max-Planck-Institut für Physik (Werner-Heinsenber-Institut), Föhringer Ring 6, 80805 München — [2]DESY, Notkestrasse 85, 22607 Hamburg

Deep Inelastic scattering of a high energetic electron on a nucleon with a large momentum transfer where a W+ or W- boson is exchanged are called Charged Current interactions (CC). The CC interactions offer the possibility to study electroweak effects and give information on specific parton density functions in the proton at high x and high Q^2. These events are triggered using their specific signature, which is large missing transverse energy in the Liquid Argon (LAr) calorimeter due to the undetected neutrino. However, the LAr trigger efficiency at low and high y was unsatisfactory within the trigger scheme of the HERA I data taking period.

The new Jet Trigger can improve the trigger efficiency in the both cases. The principle of the jet trigger is based on searching for significant local energy depositions in the calorimeter. The new trigger will make it possible to trigger on localized energy maxima instead of global energy sums (as given by the standard LAr trigger). This will allow lowering thresholds using the topological information of the jets. The jet trigger will thus be able to select physics reactions with increased efficiency and higher background rejection.

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