

The Development of Tools for Identification of Quasi-Elastic Events at the MINER ν A Experiment

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The availability of high intensity neutrino beams, like FERMILAB's NuMI makes it possible the detailed study of neutrino interactions with a high statistics as never done before. MINER ν A is a neutrino experiment at the FERMILAB NuMI neutrino beam that is designed to have a highly segmented and a high precision detector. It shall collect over 13 millions events in an estimated 4 year run. The detector will allow a detailed study of neutrino-nucleous interactions. Moreover, its segmented target, with four different materials, will make possible, for the first time, a sistematic study of nuclear effects in neutrino interactions. Its tracking and calorimetric capabilities account for a complete reconstruction of the events and assure a full identification of the particles. MINER ν A had a test run from March 2009 to June 2009 using a working prototype consisting of abou 20% of the full detector. We present here the work in progress to define filters to extract quasi-elastic events from all of the MINER ν A data sample. We present a set of test run typical events and describe how they qualify for different types of physical events. These filters shall be used with the testing data already available and then implemented into the MINER ν A general software to be used during the experiment run to be started in March 2010.