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Hand scan results for NuMI events recorded in the NOvA near detector¹ TERESA LACKEY, University of Iowa, MARK MESSIER, Indiana University - Bloomington, NOVA COLLABORATION — The NOvA experiment at Fermilab will measure oscillations of 2 GeV muon neutrinos to electron neutrinos using two detectors and both neutrino and anti-neutrino beams. These oscillations are sensitive to the neutrino mass hierarchy and CP violation. Key to the experiment is the problem of neutrino particle identification and we are pursuing efforts to optimize pattern recognition to identify neutrino interactions as ν_{μ} charged-current, ν_e charged-current, and neutral-current. To aid the development of these algorithms the experiment can use simulations, but additional valuable data are the real neutrino interactions recorded by the experiment prototype detector. These data events must be sorted into the three signal event categories. This was accomplished by a visual "hand-scan" of the neutrino candidates. To trim the event sample for scanning to a manageable size a series of selection criteria were applied with the goal of minimizing the number of cosmic-ray events while efficiently retaining neutrino events. A training regimen and a method for testing the efficiency of each hand scanner were developed to maintain consistency between various scanners. The final sample contained 800 events of which roughly 1% were electron-neutrino charged-current events.

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