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Uncontained ν_μ charged-current quasi-elastic events at the NOvA far detector JOSE SEPULVEDA-QUIROZ, Iowa State University, NOVA COLLABORATION — NOvA is a long-baseline neutrino oscillation experiment that uses an upgraded neutrino beam from Fermilab and two highly active, segmented, liquid scintillator off-axis detectors that offer a remarkable capability in event identification. In its first and second analysis results, NOvA has used only events with an interaction vertex and all secondary particles fully contained in the detectors. I will present studies of the potential sensitivity improvement of the $\sin^2 2\theta_{23}$ and Δm_{32}^2 neutrino oscillation parameters from the ν_μ -disappearance measurement when including uncontained events in the sample. In particular, this study focuses on incorporating ν_μ charged current quasi-elastic interactions of the type $\nu_\mu + n \rightarrow \mu + p$ where the muon is uncontained but the proton is contained.

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