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Estimating Neutrino Energy for the NOvA 3-Flavor analysis

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NOvA is an accelerator-based neutrino oscillation experiment. Using Fermilab's Megawatt-capable NuMI beam and two functionally identical tracking calorimeter detectors, muon (anti)neutrino disappearance and electron (anti)neutrino appearance are studied. Accurate energy estimation is vital to make good measurements of oscillation parameters, since oscillations are a function of neutrino energy. Variables for neutrino energy estimation are outputs of machine learning algorithms, which are utilized to identify events and classify reconstructed particles into either leptons or hadrons. NOvA has specialized estimators for both muon-like and electron-like neutrino events. In this talk, the latest improvements and future opportunities of these estimators will be presented.

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