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Energy reconstruction of NOvA neutrino events.

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The NOvA experiment measures long baseline oscillations from muon neutrinos into electron neutrinos in Fermilab's NuMI beam. Measurement of this oscillation probability enables determination of the neutrino mass ordering and opens a window to observation of charge-parity violation in the neutrino sector. In 2016 the NOvA experiment released results for the observation of oscillations in the $\nu_\mu \rightarrow \nu_e$ channel, the first HEP result employing CNNs. Future analyses will exploit the expected energy dependence of oscillation to improve sensitivities, together with the use of machine learning applications to improve energy estimation. I will present our methods to estimate energy for signal events, including methods based on machine learning techniques.

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