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Neutrino Energy Reconstruction with Recurrent Neural Networks at NOvA DMITRII TORBUNOV, University of Minnesota — In this talk we discuss application of the recurrent neural networks to the task of energy reconstruction at the NOvA experiment. NOvA is a long-baseline accelerator based neutrino oscillation experiment that holds a leading measurement of the Δm^2_{32} oscillation parameter. In order to achieve good estimation of the oscillation parameters it is imperative to have a good neutrino energy estimation algorithm. We have developed a new energy estimation algorithm that is based on a recurrent neural network. The new energy estimator has better performance than the previous NOvA energy estimation algorithm, and it is less affected by some of the major NOvA systematics. Using this new energy estimator has potential to significantly improve NOvA sensitivity to the oscillation parameters.

Dmitrii Torbunov
University of Minnesota

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