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Neural networks for data analysis in Baikal-GVD

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We present an overview of the deep learning pipeline developed for data processing at the Baikal-GVD experiment. The pipeline covers the complete data analysis chain, from noise hit suppression to the reconstruction of neutrino arrival directions and energies. By capturing spatial and temporal correlations across optical modules, Transformer and Graph Neural Network (GNN) architectures consistently outperform conventional algorithmic reconstruction across all tasks. Furthermore, we discuss architectural enhancements — such as master nodes, fully connected output layers, and loop structures — that boost overall reconstruction performance.

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