

## The use of Boosted Decision Trees for Energy Reconstruction in JUNO experiment

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The Jiangmen Underground Neutrino Observatory (JUNO) is a neutrino experiment with a broad physical program. The main goals of JUNO are the determination of the neutrino mass ordering and high precision investigation of neutrino oscillation properties. The precise reconstruction of the event energy is crucial for the success of the experiment.

JUNO is equipped with 17 612 + 25 600 PMT channels of two kind which provide both charge and hit time information. In this work we present a fast Boosted Decision Trees model using small set of aggregated features. The model predicts event energy deposition. We describe the motivation and the details of our feature engineering and feature selection procedures. We demonstrate that the proposed aggregated approach can achieve a reconstruction quality that is competitive with the quality of much more complex models like Convolution Neural Networks (ResNet, VGG and GNN).

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