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High level reconstruction with DNN for Higgs factories

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There are emerging interest to improve performance of the event reconstruction using deep-learning techniques. We are working on algorithms based on Graph Neural Networks for both particle flow algorithm and quark flavor tagging. For the particle flow, we imported GravNet-based structure from CMS HGCal study and applied it for photon separation at ILC calorimeter. For the quark flavor tagging, we developed an algorithm based on Graph Attention technique and compared the performance with the current algorithm, LCFIPlus. The algorithms and preliminary results of the performance will be presented.

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