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Hadronic shower substructure reconstruction with graph neural networks

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Imaging capabilities of highly granular calorimeters allow to study in detail the inner structure of hadronic showers. Reconstruction of the particle composition and properties of secondary showers in each hadronic cascade brings additional information that can be used in diferent applications. This contribution presents the graph neural network based reconstruction of electromagnetic component within a hadronic shower in the CALICE analog hadron calorimeter. Preliminary model performance, rst results on application to the hadronic energy reconstruction and prospects of segmenting distinct secondary particle components will be discussed.

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