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Generating Accurate Showers in Highly Granular Calorimeters Using Normalizing Flows

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Normalizing flows are a type of generative models that can be trained directly by minimizing the negative log-likelihood. It has been shown that flows can accurately model showers in low complexity calorimeters. We show how normalizing flows can be improved and adapted to accurately model showers in calorimeters with significantly higher complexity. One of the key points here is to move away from dense layers to convolutional layers. We show our results on datasets 2 and 3 of the CaloChallenge.

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