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## Diffusion-Based Generative Modeling for LArTPC Images

*Wednesday, 23 August 2023 16:25 (25 minutes)*

Seeking to harness the power of generative modeling for neutrino physics, we have successfully generated high-fidelity images of track and shower particle event types. We implemented a diffusion model on the PILArNet public dataset comprising 2D images from a simulated Liquid Argon Time Projection Chamber (LArTPC). In this presentation, I will outline the methodology behind the score-based generative model developed by Song & Ermon in 2019, and measure the quality of our generated LArTPC images.

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