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Flow Matching Beyond Kinematics: Generating Jets with Particle-ID and Trajectory Displacement Information

Friday 8 December 2023 12:24 (12 minutes)

We introduce a method for efficiently generating jets in the field of High Energy Physics. Our model is designed to generate ten different types of jets, expanding the versatility of jet generation techniques. Beyond the kinematic features of the jet constituents, our model also excels in generating informative features that provide insight into the types of jet constituents, such as features that indicate if a constituent is an electron or a photon, offering a more comprehensive understanding of the generated jets. Furthermore, our model incorporates valuable impact parameter information, enhancing its potential utility in high-energy physics research.

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