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OmniJet-alpha and beyond: foundation model expansions

OmniJet-alpha, released in 2024, is the first cross-task foundation model for particle physics, demonstrating transfer learning between an unsupervised problem (jet generation) and a classic supervised task (jet tagging). This talk will present current developments and expansions of the model. We will for example show how we are able to utilize real, unlabeled CMS data to pretrain the model. We will also cover how OmniJet-alpha can be used to generate calorimeter showers, showcasing its capabilities to work with very different data types.

AI keywords

foundation models; transformers; generation; classification

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Track Classification: Foundation Models