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Diffusion Models for the LHC

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Given the recent success of diffusion models in image generation, we study their applicability to generating LHC phase space distributions. We find that they achieve percent level precision comparable to INNs. To further enhance the interpretability of our results we quantify our training uncertainty by developing Bayesian versions. In this talk, diffusion models are introduced and discussed followed by a presentation of our findings.

Primary authors: BUTTER, Anja (Centre National de la Recherche Scientifique (FR)); SPINNER, Jonas Simon; HUETSCH, Nathan (Institut für Theoretische Physik, Universität Heidelberg); SORRENSON, Peter Rangi (Universität Heidelberg); PALACIOS SCHWEITZER, Sofia (ITP, University Heidelberg); PLEHN, Tilman

Presenter: PALACIOS SCHWEITZER, Sofia (ITP, University Heidelberg)

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