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The Landscape of Unfolding with Machine Learning

Recent innovations from machine learning allow for data unfolding, without binning and including correlations across many dimensions. We describe a set of known, upgraded, and new methods for ML-based unfolding. The performance of these approaches are evaluated on the same two datasets. We find that all techniques are capable of accurately reproducing the particle-level spectra across complex observables. Given that these approaches are conceptually diverse, they offer an exciting toolkit for a new class of measurements that can probe the Standard Model with an unprecedented level of detail and may enable sensitivity to new phenomena.

Primary Field of Research

Particle Physics

Primary authors: HUETSCH, Nathan (Heidelberg University, ITP Heidelberg); MARIÑO VILLADAMIGO, Javier (Institut für Theoretische Physik - University of Heidelberg); SHMAKOV, Alexander (University of California Irvine (US))

Co-authors: DIEFENBACHER, Sascha (Lawrence Berkeley National Lab. (US)); MIKUNI, Vinicius Massami (Lawrence Berkeley National Lab. (US)); HEIMEL, Theo (Heidelberg University); FENTON, Michael James (University of California Irvine (US)); GREIF, Kevin Thomas (University of California Irvine (US)); NACHMAN, Ben (Lawrence Berkeley National Lab. (US)); WHITESON, Daniel (University of California Irvine (US)); BUTTER, Anja (Centre National de la Recherche Scientifique (FR)); PLEHN, Tilman

Presenter: MARIÑO VILLADAMIGO, Javier (Institut für Theoretische Physik - University of Heidelberg)