Möbius inversion meets tensors: inference by Edgeworth series

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The problem

Generative modeling from samples

Formalism of measure transport: seek *transport map* T pushing base distribution $z \sim \mathcal{N}(0, \mathrm{Id})$ to data $T(z) \sim X$

Previous works: minimize loss over parametric family

This work: approximate transport from sample cumulants

Cumulant matching

Motivation: data scarcity in scientific applications

Modernization of [Cornish and Fisher 1938], [McCullagh 1987]

Separation of combinatorics (`sympy`) + numerics (`jax`)

Generalization of methods used in practice (Edgeworth series, moment closure, 2-point statistics in material microstructures)