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Extremal doubly stochastic measures and optimal transportation

Abstract

Surprisingly little is understood about the optimal transportation of a mass distribution from one manifold to another, where optimality is measured against a cost function on the product space.

I shall present a uniqueness criterion subsuming all previous criteria, yet which is among the very first to apply to smooth costs on compact manifolds, and only then when the topology is simple. This new result is based on a characterization of the support of an extremal double stochastic measure.