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Abstract

Optimal Transportation

In this series of lectures we introduce the Monge-Kantorovich problem of optimally transporting one distribution of mass onto another, where optimality is measured against a cost function $c(x, y)$. Connections to geometry, inequalities, and partial differential equations will be discussed, focusing in particular on recent developments in the regularity theory for Monge-Ampère type equations. An application to microeconomics may also be described, which amounts to finding the equilibrium price distribution for a monopolist marketing a multidimensional line of products to a population of anonymous agents whose preferences are known only statistically.