

Seminario de Probabilidades de Chile

Orador: Pablo López, UCLA

Título: Stochastic processes, transport of mass, and functional inequalities.

Resumen:

Functional inequalities have proven to be a ubiquitous tool in mathematics, especially in probability theory. For example, they are closely related to the concentration of measure phenomenon, and they help quantify the rate at which ergodic Markov processes converge to equilibrium. Prominent examples of those inequalities include the families of logarithmic Sobolev, Poincaré, and transport-entropy inequalities. In the first part of the talk, I will provide an introduction to this topic, highlighting the classical examples, results, and applications.

In the second part of the talk, I will address the following specific question: If we perturb a known measure that satisfies a functional inequality, is the original functional inequality still valid for the perturbed measure? In the Gaussian setting, the theory of optimal transport provides an affirmative answer, under convexity assumptions, thanks to Caffarelli's contraction theorem. In this talk, I will show how we can generalize Caffarelli's theorem to both the smooth and discrete settings, with the help of some stochastic processes that will allow us to construct deterministic transport maps that will permit the transfer of functional inequalities from some known measures towards some perturbations

El enlace para conectarse al seminario es:

Unirse a la reunión Zoom

<https://reuna.zoom.us/j/84521834914?pwd=OTZ6Y0NWM3pYTGtTbEt3c0luTG96UT09>

ID de reunión: 845 2183 4914

Código de acceso: 997973

**Modalidad híbrida en la sala Maryam Mirzakhani, Torre Norte Piso 6, , Beauchef 851.
Miércoles 27 de Agosto 2025 a las 16:15 horas.**