

**Title:**

Computation-information trade-off in high-dimensional clustering

**Abstract:**

The task of clustering a mixture of isotropic Gaussian appears to be challenging in high-dimension. In addition to the difficulties inherent to high-dimensional supervised classification, a computational barrier can preclude from successful clustering in polynomial time, even when it is information possible.

In this lecture, we will start by giving some intuitions on the minimal separation needed for successful clustering, regardless of computational complexity considerations. Then, we will discuss how the « low-degree polynomial » paradigm can be implemented to prove computational barriers in high-dimensional clustering.