MARCU-ANTONE ORSONI, University of Toronto

Dominating sets, spectral estimates and null-controllability.

Let (Ω, μ) be a measure space and let $\mathcal{F} \subset L^p(\Omega, \mu)$ be a subspace of holomorphic functions. A measurable set E is said to be dominating for $\mathcal{F}$ if there exists a constant $C_E > 0$ such that

$$\int_\Omega |f|^p d\mu \leq C_E \int_E |f|^p d\mu, \ \forall f \in \mathcal{F}.$$

In this talk, I will start giving estimates of the sampling constant C_E for Bergman spaces and Fock type spaces. Then, I will explain how this question is related to certain spectral inequalities that play a central role in the null controllability of parabolic equations. Based on joint works with A. Hartmann and S. Konaté.