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Aula T2 (UB).

Sampling measures for the Gabor transform

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ABSTRACT: Given a function φ, the Gabor transform of any other function f is defined as

$$V_\varphi f(x,y) = \int f(t)e^{-2\pi ity}\overline{\varphi(t-x)}\,dt.$$

This transform defines an isomorphism between L^2 and a reproducing kernel Hilbert space that depends on φ. We will study measures μ such that

$$\int |V_\varphi f(x,y)|^2\,d\mu \approx \|V_\varphi f\|^2 = \|f\|^2.$$

This problem has been studied before in the setting of Paley-Wiener, Bergman and Fock spaces. We will see some general sufficient conditions in the general case, in terms of weak limits of measures and uniqueness sets, as well as some applications to specific choices of φ.