
JEAN-PIERRE GABARDO, McMaster University

Weighted Beurling densities and sampling theory

In this talk, we consider Hilbert (and Banach) spaces of functions or distribution supported on a fixed compact subset of \mathbb{R}^d and for which the norm of an element is defined in terms of a weighted L^p -norm of its Fourier transform. The weight in question is assumed to be tempered and moderate. We explore the connection between sampling sets for these spaces and a suitable weighted version of Beurling density. In particular, in the Hilbert space case corresponding to $p = 2$, we obtain weighted versions of the classical density results of H. Landau which relates the measure of a compact set K to the allowable sampling rate for the Fourier transform of the L^2 -functions vanishing a.e. outside of K .