Publicacions més rellevants de la línia de recerca:
Discretització de funcions

Referència: Massaneda, X and Thomas, P. Sampling sets for the Nevanlinna class. *Rev. Mat. Iberoam.* **24** (2008) pp. 1–20

Abstract: We propose a definition of sampling set for the Nevanlinna class in the disk, i.e. a subset of the disk such that the analogue of the norm of a function in the Nevanlinna class can be recovered only from its values on the subset. We show it is equivalent with the notion of determination set for the same class, that is, subsets such that any function in the class which is bounded on the subset must be bounded everywhere (by the same bound, in fact); and more restrictive than the condition of being a determination set for the class of differences of positive harmonic functions (which had been studied in particular by Hayman, Lyons, and Gardiner). We give sufficient conditions for sampling to hold, as well as necessary conditions (different but closely related), and show that in the case of certain (natural) regular sets, the necessary and sufficient conditions coincide and characterize the sampling property in a numerically precise way. In particular, we observe a remarkable agreement with the results of Joaquim Ortega-Cerdà and Kristian Seip about çhampagne subdomains", the complement in the unit disk of a union of hyperbolic disks centered on a maximal hyperbolically separated subsequence, the radii of which decrease uniformly as they approach the unit circle. Our methods involve a careful analysis of the decrease of the modulus of a Blaschke product.

Referència: Ortega Cerdà , J. Schuster, A. Varolin, D. Interpolation and sampling hypersurfaces for the Bargmann-Fock space in higher dimensions. *Math. Ann.* **335(1)** (2006), pp. 79–107.

Abstract: We study those smooth complex hypersurfaces $W \in C^n$ having the property that all holomorphic functions of finite weighted L^p norm on W extend to entire functions with finite weighted Lp norm. Such hypersurfaces are called interpolation hypersurfaces. We also examine the dual problem of finding all sampling hypersurfaces, i.e., smooth hypersurfaces W in C^n such that any entire function with finite weighted L^p norm is stably determined by its restriction to W. We provide sufficient geometric conditions on the hypersurface to be an interpolation or sampling hypersurface. The geometric conditions that imply the extension property and the restriction

property are given in terms of some directional densities.

Referència: Marzo, J. Marcinkiewicz-Zygmund inequalities and interpolation by spherical harmonics. *J. Funct. Anal.* **250(2)** (2007), pp. 559–587.

Abstract: We find necessary density conditions for Marcinkiewicz-Zygmund inequalities and interpolation for spaces of spherical harmonics with respect to the L^p norm. Moreover, we prove that there are no complete interpolation families for $p \neq 2$.