

Average sampling in mixed shift-invariant subspaces with generators in hybrid-norm spaces

Haizhen Li¹ and Yan Tang¹

¹Guilin University of Electronic Technology

April 26, 2021

Abstract

This paper mainly studies the average sampling and reconstruction in shift-invariant subspaces of mixed Lebesgue spaces $L^{p,q}(\mathbb{R}^{d+1})$, under the condition that the generator φ of the shift-invariant subspace belongs to a hybrid-norm space of mixed form, which is weaker than the usual assumption of Wiener amalgam space and allows to control the orders p, q . First, the sampling stability for two kinds of average sampling functionals are established. Then, we give the corresponding iterative approximation projection algorithms with exponential convergence for recovering the time-varying shift-invariant signals from the average samples.

Hosted file

manuscript.pdf available at <https://authorea.com/users/410060/articles/519552-average-sampling-in-mixed-shift-invariant-subspaces-with-generators-in-hybrid-norm-spaces>