

SAMPLING, OVERSAMPLING, AND SUBSAMPLING IN DE BRANGES SPACES ARISING FROM DIFFERENTIAL OPERATORS

Luis O. Silva

Departamento de Física Matemática
Instituto de Investigaciones en Matemáticas Aplicadas y en Sistemas
Universidad Nacional Autónoma de México
C.P. 04510, México D.F.
`silva@iimas.unam.mx`

Abstract

An important mathematical technique in signal analysis and image processing is sampling theory. Kramer-type formulae for sampling functions in de Branges spaces (dB spaces) are obtained by combining properties of canonical selfadjoint extensions of the multiplication operator and the reproducing kernel. By recurring to the property that dB subspaces of dB spaces are totally ordered by inclusion, we extend the concepts of oversampling and subsampling to a wide class of dB spaces related to Schrödinger operators. Moreover, we obtain a fine tuning of sampling kernels on the basis of recent results for dB spaces arising from differential operators

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