

Strang-Fix theory for approximation order in weighted L^p -spaces and Herz spaces

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(Communicated by Hans G. Feichtinger)

2000 Mathematics Subject Classification. 41A25, 42B25.

Keywords and phrases. Strang-Fix theory, multiresolution approximation, A_p -weight, weighted Sobolev space, weighted Herz-Sobolev space.

Abstract. In this paper, we study the Strang-Fix theory for approximation order in the weighted L^p -spaces and Herz spaces.

1. Introduction

In [10], Strang and Fix considered the relation between approximation order in $L^2(\mathbb{R}^n)$ of a given function and properties of its Fourier transform. In order to describe their results, we make the following definitions. Let $\varphi \in C_c(\mathbb{R}^n)$, where $C_c(\mathbb{R}^n)$ consists of all continuous functions on \mathbb{R}^n with compact support. For a sequence c on \mathbb{Z}^n , the semi-discrete convolution product $\varphi *' c$ is defined by

$$\varphi *' c = \sum_{\nu \in \mathbb{Z}^n} \varphi(\cdot - \nu)c(\nu).$$