

Equivalent norms of Herz-type Besov and Triebel-Lizorkin spaces*

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Abstract. In this paper the author obtains equivalent norms of Herz-type Besov and Triebel-Lizorkin spaces, which are generalizations of well-known Herz-type spaces and inhomogeneous Besov and Triebel-Lizorkin spaces.

1. Introduction

It is well known that the theory of function spaces has played important roles in both classical analysis and modern analysis. In particular, these two scales spaces, $B_{p,q}^s(\mathbb{R}^n)$ and $F_{p,q}^s(\mathbb{R}^n)$, contain many classical spaces as special cases, for example, the Hölder spaces, the Sobolev spaces, the Bessel-potential spaces, the Zygmund spaces, the local Hardy spaces and the space $\text{bmo}(\mathbb{R}^n)$. All the above-mentioned classical spaces have been proved to be useful tools in the study of ordinary and partial differential equations. For details one can see Triebel's books [11], [12], [13] and [14].

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