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Some Topological Properties of Certain Normed Space Valued Function Space Defined by Orlicz Function

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Abstract

The aim of this paper is to introduce and study a new class $S(X, (Y, \|.\|), \Phi, \gamma, u)$ of normed space Y- valued functions using Orlicz function Φ as a generalization of some of the wellknown sequence spaces and function spaces. Besides the investigation of linear space structures of the class $S(X, (Y, \|.\|), \Phi, \gamma, u, M)$, our primarily interest is to explore the conditions pertaining the containment relation of the class $S(X, (Y, \|.\|), \Phi, \gamma, u)$ in terms of different γ and u so that such a class of functions is contained in or equal to another class of similar nature.

Key words: Orlicz Function, Orlicz Sequence Space, Solid Space

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1. Introduction

Lindenstrauss and Tzafriri [9] used the idea of Orlicz function Φ to construct the sequence space ℓ_Φ of scalars (x_k) such that

$$\ell_\Phi = \left\{ x = (x_k) \in \omega : \sum_{k=1}^{\infty} \Phi\left(\frac{|x_k|}{r}\right) < \infty \text{ for some } r > 0 \right\}.$$

The space ℓ_Φ with the norm