

A FEW RESULTS ON RELATIVE RITT TYPE AND RELATIVE RITT WEAK TYPE OF ENTIRE FUNCTIONS REPRESENTED BY VECTOR VALUED DIRICHLET SERIES

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Date of Receiving : 25.06.2016
Date of Revision : 03.09.2016
Date of Acceptance : 03.09.2016

Abstract. In this paper we wish to study some growth properties of entire functions represented by a vector valued Dirichlet series on the basis of relative Ritt type and relative Ritt weak type.

1. Introduction, Definitions and Notations

Let $f(s)$ be an entire function of the complex variable $s = \sigma + it$ (σ and t are real variables) defined by everywhere absolutely convergent vector valued Dirichlet series

$$f(s) = \sum_{n=1}^{\infty} a_n e^{s\lambda_n} \quad (1.1)$$

where a_n 's belong to a Banach space $(E, \|\cdot\|)$ and λ_n 's are non-negative real numbers such that $0 < \lambda_n < \lambda_{n+1}$ ($n \geq 1$), $\lambda_n \rightarrow \infty$ as $n \rightarrow \infty$ and satisfy the conditions

$$\limsup_{n \rightarrow \infty} \frac{\log n}{\lambda_n} = D < \infty$$

and

$$\limsup_{n \rightarrow \infty} \frac{\log \|a_n\|}{\lambda_n} = -\infty .$$

If σ_c and σ_a denote respectively the abscissa of convergence and absolute convergence of (1.1), then in this case clearly $\sigma_a = \sigma_c = \infty$.

2010 Mathematics Subject Classification. 30B50,30D15,30D99.

Key words and phrases. Vector valued Dirichlet series (VVDS), relative Ritt order, relative Ritt lower order, relative Ritt type, relative Ritt weak type, growth.

Communicated by. Huzoor H. Khan

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