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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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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*

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

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

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

and

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

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

The function $M_f(\sigma)$ known as *maximum modulus* function corresponding to an entire function $f(s)$ defined by (1.1), is written as follows

$$M_f(\sigma) = \underset{-\infty<t<\infty}{l.u.b.} \|f(\sigma + it)\| .$$

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