

962-46-343

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Kizugawadai, 619-0225 Kizu, Kyoto, Japan. *Roles of Growth Functions in Infinite Dimensional  
Analysis*. Preliminary report.

In this talk, we will give a quick survey of recent results on growth functions in white noise theory. First, we will introduce a certain class of growth functions  $u$  and apply the Legendre transform to  $u$  to obtain the weight sequence  $\{\alpha(n)\}$  first studied by Cochran-Kuo-Sengupta [IDAQP, **1** (1998) 43–67] (CKS for short). Recently, Gannoun-Hachaichi-Ouerdiane-Rezgui [JFA, **171** (2000) 1–14](GHOR for short) have studied the space of holomorphic functions on a nuclear space by using Young’s equality and an application to white noise theory. However, the connection with CKS’ work is not examined precisely in their paper. To study this relationship, we will face several delicate problems on estimates for weight sequences and for growth functions when Kondratiev-Streit and more generally CKS-spaces are considered. We will give a systematic method to solve such difficulties with complete generality. After this treatment, the precise relationship between our approach and CKS in addition to GHOR will be discussed. Then, the Gel’fand triple  $[\mathcal{E}]_u \subset (L^2) \subset [\mathcal{E}]_u^*$  will be constructed and characterized in terms of S-transform with very general growth conditions. (Received September 12, 2000)