1056-37-656 **Mrinal Kanti Roychowdhury*** (roychowdhurymk@utpa.edu), Dept of Mathematics, UTPA, 1201 West University Drive, Edinburg, TX 78539. *Gibbs measure and the quantization dimension function.*

As a mathematical topic quantization for probability distributions concerns the best approximation of a d-dimensional probability distribution P by a discrete probability with a given number of n-supporting points or in other words, the best approximation of a d-dimensional random vector X with distribution P by a random vector Y with at most n values in its image. The random vector Y which gives the error minimum is called the optimal quantizer of the random vector X and the corresponding error is called the optimal error. The image set of the optimal quantizer is called the optimal set. One of the main goal of quantization theory is to estimate the rate called Quantization dimension function at which the specified measure of the error goes to zero as n increases. Recently, in a very few cases it has been shown that quantization dimension also has a relationship with the temperature function arising in thermodynamic formalism.

In this talk I will show the quantization dimension function and its relationship with the temperature function for the image measure of Gibbs measure on the one-sided shift dynamical system on the limit set generated by a set of contractive similarities. (Received September 15, 2009)