1054-37-12 **Mrinal Kanti Roychowdhury*** (roychowdhurymk@utpa.edu), Dept of Mathematics, UTPA, 1201 West University Drive, Edinburg, TX 78539. *Quantization dimension function and ergodic measure with bounded distortion.tex.*

The term "quantization" in the title originates in the theory or signal processing. It was used by electrical engineers starting in the late 40's. 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** at which the specified measure of the error goes to zero as n increases.

In this talk the quantization dimension function for the image measure on a self-conformal set of an ergodic measure with bounded distortion and its relationship with the temperature function of the thermodynamic formalism will be shown. (Received June 13, 2009)