1067-94-1354   **Mrinal Kanti Roychowdhury*** (`roychowdhurymk@utpa.edu`), Dept of Math, UTPA, 1201 West University Drive, Edinburg, TX 78539. *Quantization dimension for an infinite iterated function system.*

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, I will show how to determine the quantization dimension function for a probability measure generated by an infinite iterated function system. A relationship between the quantization dimension and the temperature function of the thermodynamic formalism is also established. (Received September 20, 2010)