1046-37-1886 **Santanu Chakraborty*** (schakraborty@utpa.edu), Assistnat Professor, Mathematics, UTPA, 1201 West University Drive, Edinburg, TX 78541. .

The usual Gauss transformation $U(x) = \frac{1}{x} - [\frac{1}{x}]$ for $x \in (0,1]$ gives rise to a dynamical system which is nothing but the usual continued fraction expansion $[a_1, a_2, \cdots]$. The invariant measure for this dynamical system is given by $d\mu(x) = \frac{1}{\log 2}\frac{1}{1+x}\,dx$ for $x \in (0,1]$. Now instead of the usual continued fraction expansion, if we consider the θ-expansion corresponding to some $\theta \in [0,1)$, then this expansion also corresponds to some dynamical system which is obtained from a generalized version of the Gauss transformation given by $T(x) = \frac{1}{x} - \theta[\frac{1}{\theta x}]$ for $x \in (0,\theta]$. In this talk, we make an elaborate study on the generalized Gauss transformation. (Received September 16, 2008)