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Nicolai T A Haydn* (nhaydn@usc.edu), Department of Mathematics, University of Southern California, Los Angeles, CA 90089. *Limit laws and the theorem of Shannon-McMillan-Breiman.*

The theorem of Shannon-McMillan-Breiman states that for every generating partition on an ergodic system of finite entropy the exponential decay rate of the measure of cylinder sets equals the metric entropy almost everywhere. We will discuss under what conditions the measure of n -cylinders is lognormally distributed in the limit (i.e. a Central Limit Theorem). We will also provide conditions under which the logarithm of the measure of n -cylinder, the information function, satisfies the almost sure invariance principle. For this we have to require that the measure is β -mixing. This extends previous results due to Philipp and Stout who deduced the ASIP when the measure is strong mixing and satisfies an L^1 -type Gibbs condition. We get a similar results for the recurrence time. (Received February 06, 2014)