1100-37-133   **Wen Huang** (`wenh@mail.ustc.edu.cn`), Department of Mathematics, University of Science and Technology of China, Hefei, Anhui 230026, and **Kening Lu*** (`klu@math.byu.edu`), Department of Mathematics, Brigham Young University, Provo, UT 84604. *ENTROPY, CHAOS AND WEAK HORSESHOE FOR INFINITE DIMENSIONAL RANDOM DYNAMICAL SYSTEMS.*

In this talk, we give an answer to the problem on the implication of positive entropy of a random dynamical system. We show that if a random dynamical system has a compact random invariant set such as random attractor with positive topological entropy, then the system is chaotic and has a weak horseshoe. As a corollary, we have the same conclusion for a deterministic dynamical system with a compact invariant set of positive topological entropy. The chaotic behavior we have here is due to the positive entropy, not the randomness of the system. (Received February 05, 2014)