1077-37-2394 **Lucas Manuelli** (manuelli@princeton.edu) and **Jared Hallett*** (jared.hallett@gmail.com), Williamstown, MA 01267, and **Cesar E. Silva** (csilva@williams.edu). *On Li-Yorke Measurable Sensitivity.* Preliminary report.

The notion of Li-Yorke sensitivity has been studied extensively in the case of topological dynamical systems. We introduce a measurable version of Li-Yorke sensitivity, for nonsingular (and measure-preserving) dynamical systems, and compare it with various mixing notions. It is known that in the case of nonsingular dynamical systems, ergodic Cartesian square implies double ergodicity, which in turn implies weak mixing, but the converses do not hold in general, though they are all equivalent in the finite measure-preserving case. We show that for nonsingular systems, ergodic Cartesian square implies Li-Yorke measurable sensitivity, which in turn implies weak mixing. As a consequence we obtain that, in the finite measure-preserving case, Li-Yorke measurable sensitivity is equivalent to weak mixing. We also show that with respect to totally bounded metrics, double ergodicity implies Li-Yorke measurable sensitivity, and extend the known result that weak mixing implies measurable sensitivity for finite measure-preserving systems to the case of infinite measure-preserving systems. (Received September 22, 2011)