

[Akin, Ethan](#); [Kolyada, Sergii](#)

Li-Yorke sensitivity. (English) [Zbl 1045.37004](#)
[Nonlinearity](#) 16, No. 4, 1421-1433 (2003).

The Li-Yorke definition of chaos is linked here to the natural notion of sensitivity to initial conditions. A topological dynamical system (X, T) is said to be Li-Yorke sensitive if there exists $\varepsilon > 0$ with the property that every point $x \in X$ is a limit of points y for which (x, y) is proximal but not ε -asymptotic. Li-Yorke sensitivity is strictly stronger than sensitivity: a minimal system which is distal but not equicontinuous is sensitive but not Li-Yorke sensitive. Here, it is shown that a topologically weak-mixing system is Li-Yorke sensitive (it was known earlier that such systems are Li-Yorke chaotic). In addition a system is constructed which is Li-Yorke chaotic but not Li-Yorke sensitive. Several open problems are raised about the structure of Li-Yorke sensitive maps.

Reviewer: [Thomas Ward \(Norwich\)](#)

MSC:

[37B05](#) Dynamical systems involving transformations and group actions with special properties (minimality, distality, proximality, expansivity, etc.)

[54H20](#) Topological dynamics (MSC2010)

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