1154-37-1252   **Piotr Oprocha*** (`oprocha@agh.edu.pl`), AGH University of Science and Technology, Faculty of Applied Mathematics, al. Mickiewicza 30, 30-059 Krakow, Poland. *On completely scrambled systems.*

Let (X, T) be a dynamical system (continuous map T acting on a compact metric space (X, d)). A pair of points (x, y) is Li-Yorke chaotic if it is proximal ($\liminf_{n\to\infty} d(T^n x, T^n y) = 0$) but not asymptotic ($\liminf_{n\to\infty} d(T^n x, T^n y) > 0$). A set $A \subset X$ is scrambled, if any pair of distinct points of A is Li-Yorke chaotic.

Very quickly after publication of paper of Li and Yorke in 1975 it was realized that uncountable scrambled set can be constructed in many case. In fact, it exists in every dynamical system with positive topological entropy (Blanchard, Glasner, Kolyada and Maass, 2002). On the other hand, it seems intuitively that compactness prevents whole space to be scrambled (so-called completely scrambled system), however also such examples were developed.

The aim of this talk is present history of research on completely scrambled systems, including some recent results. (Received September 14, 2019)