ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

9. Ordinary Differential Equations and Dynamical Systems

1991 MS Classification: 58F13, 58F08; Secondary 54E70, 54H20
Smital, Jaroslav, Silesian University, Opava, Czech Republic
Distributional chaos in dynamical systrems generated by iterates of continuous maps.
If f is a continuous map of a compact metric space X, and $x, y \in X$, let F_{xy} and F^*_{xy} be the lower and the upper distribution functions generated by the distances between trajectories of x and y. I. e., $F_{xy}(t) = \liminf_{n\to\infty} \sum_{i=0}^{n-1} 1_{[0,t)}(\rho(f^i(x), f^i(y)))$. We show that these distribution function can be used as an effective measure of the size of chaos. Part of these results is joint work with B. Schweizer, F. Balibrea and A. Sklar.
Reference: B. Sklar and J. Smital, Measures of chaos and a spectral decomposition of dynamical systems on the interval, *Trans. Amer. Math. Soc.* **344** (1994), 737 – 754.