

Functional envelopes of dynamical systems – old and new results

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The notion of the functional envelope of a dynamical system was introduced by J. Auslander, S. Kolyada and the speaker in 2007. They were inspired mainly by the previous works of A. N. Sharkovsky and his collaborators, and by the notion of the density index of a topological semigroup.

If (X, f) is a dynamical system given by a compact metric space X and a continuous map $f : X \rightarrow X$, then the functional envelope of (X, f) is the dynamical system $(S(X), F_f)$ whose phase space $S(X)$ is the space of all continuous self-maps of X and the map $F_f : S(X) \rightarrow S(X)$ is defined by $F_f(\varphi) = f \circ \varphi$ for any $\varphi \in S(X)$.

In the first part of the talk we will recall the most interesting facts known on the dynamics of functional envelopes. Then we will speak on recent results due to T. Das, E. Shah and the speaker.