

# ANOSOV $\varepsilon$ -ORBITS AND MIXED DYNAMICS

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We review recent results related to the new type of dynamical chaos, the so-called, “mixed dynamics” which can be considered as an intermediate state between the strange attractor and conservative chaos. The phenomenon of mixed dynamics is related to the existence of such open regions (a version of Newhouse regions) in the space of dynamical systems, where systems with the following properties are dense:

- (i) the system has infinitely many hyperbolic periodic orbits of all possible types (stable, completely unstable, saddle);
- (ii) the closures of the sets of orbits of different types have a nonempty intersection.

Essentially, this means that for such systems the attractor  $\mathcal{A}$  and repeller  $\mathcal{R}$  have a non-empty intersection but do not coincide. In the talk we propose a mathematical concept of mixed dynamics based on the notion of  $\varepsilon$ -orbits.