Cornell Dynamical Systems Seminar

www.math.cornell.edu/~dynsem/

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Skew products with interval fiber

Skew products with a topological Markov chain in base naturally appear when one attempts to apply the methods of classical dynamical systems to random dynamical systems. There is also a close connection between the skew products and partially hyperbolic dynamical systems on smooth manifolds.

Even for the fiber dimension equal to one, we are far from understanding what "typical" skew products look like. During the last 30 years there appeared several papers studying the skew products with a circle fiber. I will talk about the case when the fiber is an interval, and fiber maps are orientation-preserving diffeomorphisms onto its image.

In the work joint with V.Kleptsyn, we developed a theorem which gives us a complete* description of the dynamics of typical step skew products (fiber map depends only on a single symbol in the base sequence). For generic skew products, we obtained a similar result using an additional assumption of partial-hyperbolic nature.

*except some subset which projects onto zero measure set in the base

Friday, September 10, 2010, 2:15 pm, in 205 Malott Hall