On the shadowing property and odometers

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When we investigate the space of invariant measures from ergodic theory point of view, we are usually not that much interested in the topological structure of underlying space. By famous Jewett–Krieger theorem, we can view invariant measures as supported on minimal systems and numerous further generalizations allow to add even more topological (dynamical) properties to the underlying system. On the other hand, there are examples of systems with quite rich dynamical structure (e.g. topologically mixing) but not that much interesting invariant measures (e.g. only trivial measure, only atomic measures, etc.). In other words, connections between topology and ergodic theory (on compact metric spaces) is not that tight.

In this talk we will provide some characterizations of invariant measures in the case when a dynamical system (X, T) has the shadowing property. We will show that often invariant measures can be approximated by a special class of minimal dynamical systems. We will also comment on possibilities of approximation of entropy.