1042-03-93 **C. Ward Henson*** (henson@math.uiuc.edu), Mathematics Department, University of Illinois, 1409 West Green Street, Urbana, IL 61801. *Model theory of probability spaces with an automorphism.* Preliminary report.

We consider probability measure algebras equipped with a (measure preserving) automorphism as metric structures, in the setting of [0,1]-valued continuous first-order logic. The continuous theory of this class of structures has a model companion APAA, whose properties are central to this project. The models of APAA consist of structures $(\mathcal{B}, \mu, \tau)$ in which $(\mathcal{B}, \mu)$ is an atomless probability measure algebra and the automorphism τ comes from an aperiodic automorphism of the underlying probability space. The theory APAA is complete, admits quantifier elimination, and is stable; there is a natural characterization of its associated model-theoretic independence relation.

This talk is based on joint work with Alexander Berenstein. (Received August 12, 2008)