1077-03-154        **C. Ward Henson\*** (`henson@math.uiuc.edu`), 1409 West Green Street, Champaign, IL 61801.
*Continuous first order logic and Gurarii's universal homogeneous separable Banach Space.*

A continuous, [0,1]-valued generalization of first order logic was developed recently. Its structures are based on bounded metric spaces and equipped with uniformly continuous operations and [0,1]-valued predicates. This talk will provide a brief introduction to this logic as well as pointers to some recent application areas, and then it will concentrate on the model theory of Gurarii's separable Banach space. This space is isometrically universal (for separable Banach spaces) and homogeneous in an almost-isometric sense relative to its finite dimensional subspaces. Lusky showed that the Gurarii space is isometrically unique and that the set of smooth points of norm 1 is an orbit of its automorphism group. In this talk it will be shown how these results look from the point of view of continuous model theory. In particular, the class of separable Gurarii spaces can be realized as the class of separable models of a continuous theory T (of unit balls of Banach spaces). Analysis of the type spaces of T over finite sets of parameters can be used to prove the separable categoricity of T (= Lusky's uniqueness result) as well as to prove new results about the action of the automorphism group of Gurarii's space. (Received September 19, 2011)