1145-03-1703 **Jan Reimann*** (jan.reimann@psu.edu), Department of Mathematics, Pennsylvania State University, University Park, PA 16802. *Hausdorff dimension and randomness for continuous measures.*

The connection between supporting a non-atomic probability measure and the Hausdorff dimension of a set is a fundamental tool in geometric measure theory. It is also helpful in the study of algorithmic randomness. An effective version of Frostman's Lemma states that if a real has positive effective Hausdorff dimension, it is Martin-Löf random with respect to a continuous probability measure. In this talk, we present some new results on the connection between Hausdorff measures and randomness for continuous measures. In particular, we will use iterates of the dissipation function of a continuous measure on Cantor space to define a family of generalized Hausdorff measures. These measures can in turn be used to construct examples of NCR reals (i.e., reals not random with respect to any continuous probability measure) in a wide array of hyperarithmetic Turing degrees. This is joint work with Mingyang Li (Penn State). (Received September 24, 2018)