1064-03-230 **Jan S Reimann*** (reimann@math.psu.edu), Department of Mathematics, Pennsylvania State University, University Park, PA 16802. *Effective geometric measure theory.*

We study two central results of geometric measure theory - Frostman's Lemma and the existence of subsets of finite measure - from a computability theoretic view. We use computability theoretic methods to give a new proof of Frostman's Lemma and use it to prove a collapse of randomness notions. Furthermore, we will study the Muchnik degrees related to subsets of finite Hausdorff measure of a given Borel set. (Received September 09, 2010)