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Douglas Cenzer* (cenzer@uf1.edu), Department of Mathematics, University of Florida, Gainesville, FL 3211-8105, and **Christopher Porter**, Department of Mathematics & Computer Science, Drake University, Des Moines, IA 50311. *The random members of a Π_1^0 class*. Preliminary report.

We examine the notion of algorithmic randomness for elements of a given effectively closed set P . Now P may be viewed as the set of infinite paths through a tree T_P , so one approach is to randomly produce a path through T_P . This notion of randomness for elements of P may be induced by a map from 2^N onto P , which is computable relative to T_P and also has a characterization in term of Kolmogorov complexity. Another approach is to define a relative measure on P , which becomes interesting if P has Lebesgue measure 0. We explore some notions of homogeneity for effectively closed sets, inspired by work of van Lambalgen. A key finding is that in sufficiently homogeneous sets P , each of these approaches coincides. (Received August 24, 2016)