1123-03-230 **Timothy H. Rute** and **Jason M. Rute*** (jmr71@math.psu.edu). *A uniform reducibility in computably presented Polish spaces.* Preliminary report.

Given computably presented Polish spaces $\mathbb{X}$ and $\mathbb{Y}$, we say $x \in \mathbb{X}$ is *reducible to* $y \in \mathbb{Y}$ if there is a Π^0_1 set $P \subseteq \mathbb{Y}$ and a computable map $f \colon P \to \mathbb{X}$ such that $f(y) = x$. For each space $\mathbb{X}$ one may consider the corresponding degree structure $\mathbf{deg}(\mathbb{X})$. For example, $\mathbf{deg}(2^{\mathbb{N}})$ is (isomorphic to) the truth-table degrees, whereas both $\mathbf{deg}(\mathbb{N}^{\mathbb{N}})$ and $\mathbf{deg}(\mathbb{R})$ are proper extensions of $\mathbf{deg}(2^{\mathbb{N}})$.

This new reducibility has many motivations. First, truth-table reducibility on $2^{\mathbb{N}}$ is too restrictive of a setting for computable analysis. For example, there are functions $f \in \mathbb{N}^{\mathbb{N}}$ not truth-table reducible to any $X \in 2^{\mathbb{N}}$ and sequences $X \in 2^{\mathbb{N}}$ such that $X/3 \not\leq_{tt} X$. Second, this project mirrors Miller's non-trivial work extending Turing reducibility to computably presented Polish spaces. Last, our reducibility grew naturally out of work of the first author on computable arcs and the second author on Schnorr randomness. For example, we show that, for $\mathbb{R}^d$, every Schnorr random is found in some computable arc. (Received August 27, 2016)