

Schnorr trivial reals: A construction

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A real is Martin-Löf (Schnorr) random if it does not belong to any effectively presented null Σ_1^0 (recursive) class of reals. Although these randomness notions are very closely related, the set of Turing degrees containing reals that are K -trivial has very different properties from the set of Turing degrees that are Schnorr trivial. Nies proved that all K -trivial reals are low. In this paper, we prove that if \mathbf{h} is a high degree, then every degree $\mathbf{a} \geq_T \mathbf{h}$ contains a Schnorr trivial real. Since this concept appears to separate computational complexity from computational strength, it suggests that Schnorr trivial reals should be considered in a structure other than the Turing degrees.