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Intrinsic Density and Intrinsically Small Sets

One potentially troubling feature in the study of asymptotic computability is that every nonzero Turing degree contains a set which is "almost computable" in an artificially unenlightening way. In response, Astor introduced the notion of intrinsic density, i.e. asymptotic density invariant under computable permutation, with the goal of ensuring that "almost computable" sets cannot be achieved by trivial codings. We discuss some properties of intrinsically small sets (those with intrinsic density 0), and show that by requiring an error set to be intrinsically small rather than just small in the traditional asymptotic computability sense we avoid the aforementioned problem. We also briefly remark upon which reals can be achieved as the intrinsic density of a set.