

Some consequences of TD and sTD

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Let TD be Turing determinacy and sTD be strongly Turing determinacy (i.e. every cofinal subset of reals has a pointed subset). We prove that, by using recent result in algorithmic randomness theory, $ZF+TD$ implies $wDC_{\mathbb{R}}$ (i.e. if R is a binary relation over reals so that $\forall x \exists y R(x, y)$, then there is an R -descending sequence.) and sTD implies Besicovitch-Davis and Joyce-Preiss theorems hold for all sets of reals. Some other results will be presented if time permitted. This is joint work with Yinhe Peng and Liuzhen Wu.