Π^0_1 Classes and pseudojump operators

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Abstract

For a pseudojump V^X and a Π^0_1 class P, we consider properties of the set $\{V^X : X \in P\}$. We show that if P is Medvedev complete or if P has positive measure, and $\emptyset' \leq_T C$, then there exists $X \in P$ with $V^X \equiv_T C$. We examine the consequences when V^X is Turing incomparable with V^Y for $X \neq Y$ in P and when $W_e^X = W_e^Y$ for all $X, Y \in P$. Finally, we give a characterization of the jump in terms of Π^0_1 classes.