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Baire Domination

Say that a space X is "Baire–dominated" by a space Y provided the Baire subsets of X are precisely the sets of the form $\phi^{-1}(B)$ for some Baire subset B of Y and some continuous function $\phi : X \to Y$.

Theorem 1 *Every space is Baire–dominated by the Hilbert cube.*

Example 1 *I^2 is not Baire–dominated by I.*

Observation 1 *Every space is "weakly Baire–dominated" (allowing ϕ to be of Baire class 1) by every uncountable complete separable metric space.*

Problem 1 *Which spaces Baire–dominate all spaces?*