On Some Paradoxical Point Sets in Different Models of Set Theory

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Abstract

We consider certain pathological point sets from the general measure theoretical point of view. Namely, we discuss some modified versions of measurability of sets and functions: absolute measurability, relative measurability, and absolute non-measurability. In particular, we show how it is possible to extend the Lebesgue measure to translation invariant measures whose domains include the family of all Sierpinski sets, certain kinds of Bernstein sets, some Hamel bases, and so forth. Moreover, one of our research goals is to study the descriptive structure of some pathological functions in different models of set theory, in particular, in **L**.