INVARIANT σ-IDEALS WITH ANALYTIC BASE ON GOOD CANTOR MEASURE SPACES

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Definition 1. (X, μ) *is called a* Cantor measure space *if the topological space X is homeomorphic to the Cantor cube $\{0,1\}^\omega$ and the measure $\mu : \mathcal{B}(X) \to [0, \infty)$ is* continuous*, i.e. $\mu(\{x\}) = 0$ for any point $x \in X$.*

Definition 2. *A Cantor measure space (X, μ) is called* good *if its measure μ is* good *in the sense of Akin (see* [1]*), i.e.,*

- strictly positive*, i.e. $\mu(U) > 0$ for any non-empty open set $U \subseteq X$),*
- *μ satisfies the* Subset Condition*, i.e. for any clopen sets $U, V \subseteq X$ with $\mu(U) < \mu(V)$ there is a clopen set $U' \subseteq V$ such that $\mu(U') = \mu(U)$.*

Theorem 1 ([2])**.** *Each non-trivial invariant σ-ideal $\mathcal{I}$ with analytic base on a good Cantor measure space (X, μ) is equal to one of the σ-ideals:*

$$\begin{tikzcd} & & \mathcal{M} \\ \mathcal{E} \arrow[r] & \mathcal{M} \cap \mathcal{N} \arrow[ur] \arrow[dr] & \\ & & \mathcal{N} \end{tikzcd}$$

References

[1] E.Akin, *Good measures on Cantor space*, Trans. Amer. Math. Soc. 357 (2005), 2681-2722.

[2] T. Banakh, R. Rałowski, S. Żeberski, *Classifying invariant σ-ideals with analytic base on good Cantor measure spaces*, Proc. Amer. Math. Soc., 144 (2016) 837-851.

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