On Strong Measure Zero Subsets of ${}^{\kappa}2$

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This joint work with Saharon Shelah.

We define the natural concept of the strong measure zero in the generalized Cantor space ${}^{\kappa}2$ and the generalized Baire space ${}^{\kappa}\kappa$. We equip ${}^{\kappa}\kappa$ with the topology where a basic neighborhood of a point η is the set $\{\nu : (\forall j < i)(\nu(j) = \eta(j))\}$, where $i < \kappa$. In this paper we answer some problems posed in [1].

Theorem A The family of strong measure zero subsets of ${}^{\kappa}2$ is 2^{κ}-additive under GMA(κ) and $2^{<\kappa} = \kappa$.

Theorem B The generalized Borel conjecture is false in ${}^{\kappa}2$ assuming ZFC+$\kappa^{<\kappa} = \kappa$.

[1] A. Halko. Negligible subsets of the generalized Baire space $\omega_1^{\omega_1}$, *Ann. Acad. Sci. Ser. Diss. Math.* **108** (1996).

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