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On n-thin dense sets in powers of topological spaces

Comment.Math.Univ.Carolin. 57,1 (2016) 73 –82.

Abstract: A subset of a product of topological spaces is called n-thin if every its two distinct points differ in at least n coordinates. We generalize a construction of Gruenhage, Natkaniec, and Piotrowski, and obtain, under CH, a countable T_3 space X without isolated points such that X^n contains an n-thin dense subset, but X^{n+1} does not contain any n-thin dense subset. We also observe that part of the construction can be carried out under MA.

Keywords: dense set; thin set; κ-thin set; independent family
AMS Subject Classification: 54B10, 54A35

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