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Book of Abstracts

A. Bartoš, D. Chodounský (eds.)



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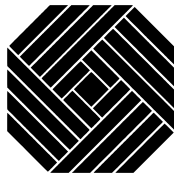
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On dense sets of products of spaces

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The classical Hewitt–Marczewski–Pondiczery theorem states that if $d(X_s) \leq \tau$ ($\omega \leq \tau$) for every $s \in S$ and $|S| \leq 2^\tau$ then $d(\prod_{s \in S} X_s) \leq \tau$.

Very important is the problem of the existence of a dense set of a cardinality τ in the product $\prod_{s \in S} X_s$ which contains no convergent nontrivial sequences.

For $\tau = \omega$ the existence of such set were proved for I^c (W.H. Priestly, 1970), for D^c , where D is the two point discrete space (P. Simon, 1978), for Z^c , where Z is separable not single point T_1 -space (A. Gryzlov, 2018), for a product of 2^c separable decomposable spaces, i.e. spaces, which contain two not empty closed disjoint sets (A. Gryzlov, 2020).

We prove

Theorem. *For a regular cardinal τ the product $\prod_{\alpha \in 2^\tau} X_\alpha$ of decomposable spaces, where $d(X_\alpha) = \tau$ ($\alpha \in 2^\tau$), contains a dense set Q , $|Q| = \tau$, such that in every subset $P \subseteq Q$, $|P| = \tau$, there is $P' \subseteq P$, $|P'| = \tau$, which contains no convergent nontrivial sequences and therefore is sequentially closed.*

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