
Zbl 114.14102
Erdős, Pál; Hajnal, András
On the topological product of discrete λ-compact spaces (In English)
General Topology and its Relations to modern Analysis and Algebra, Proc. Sympos. Prague 1961, 148-151 (1962).

[For the entire collection see Zbl 111.35001.]
A topological space $\mathfrak{X}$ is said to be κ-compact if every class $\mathcal{M}$ of closed subsets of $\mathfrak{X}$ with void intersection contains a subclass $\mathcal{M}' \subseteq \mathcal{M}$ having a void intersection and a power $\overline{\overline{\mathcal{M}'}}$ with $\overline{\overline{\mathcal{M}'}} < \aleph_\kappa$.
For each cardinal number m and each pair of ordinal numbers λ, κ, one uses the abbreviation $\top(m, \lambda) \to \kappa$ of the statment "if $\mathcal{F}$ is a class of discrete λ-compact topological spaces with the power $\overline{\overline{\mathcal{F}}} = m$ then the topological product of the elements of $\mathcal{F}$ is κ-compact". The authors give an outline of the proof of the theorem "if α, γ are ordinals such that $\aleph_{\alpha+\gamma}$ is singular and $cf(\gamma) < \omega$ then the statement $\top(\aleph_{\alpha+\gamma}, \alpha+1) \to \alpha+\gamma$ is false" (using the generalized continuum-hypothesis); they discuss some related problems, too. By the theorem the question "$\top(\aleph_\omega, 1) \to \omega$?", stated in another paper of the authors [see Acta Math. Acad. Sci. Hung. 12, 87-123 (1961; Zbl 201.32801)], is answered negative.

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Classification:
54D45 Local compactness, etc.
54A25 Cardinality properties of topological spaces