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Σ_s-products revisited

Abstract: We show that any Σ_s-product of at most $\mathfrak{c}$-many $L\Sigma(\leq \omega)$-spaces has the $L\Sigma(\leq \omega)$-property. This result generalizes some known results about $L\Sigma(\leq \omega)$-spaces. On the other hand, we prove that every Σ_s-product of monotonically monolithic spaces is monotonically monolithic, and in a similar form, we show that every Σ_s-product of Collins-Roscoe spaces has the Collins-Roscoe property. These results generalize some known results about the Collins-Roscoe spaces and answer some questions due to Tkachuk [*Lifting the Collins-Roscoe property by condensations*, Topology Proc. **42** (2012), 1–15]. Besides, we prove that if X is a simple Lindelöf Σ-space, then $C_p(X)$ has the Collins-Roscoe property.

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