Function spaces of Corson-like compacta

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For an index set Γ and a cardinal number κ the Σ_κ-product of real lines $\Sigma_\kappa(\mathbb{R}^\Gamma)$ consist of all elements of $\mathbb{R}^\Gamma$ with $< \kappa$ nonzero coordinates. A compact space is κ-Corson if it can be embedded into $\Sigma_\kappa(\mathbb{R}^\Gamma)$ for some set Γ. For $\kappa = \omega_1$ the class of κ-Corson compact spaces is the well known class of Corson compact spaces. We also consider a class of compact spaces wider than the class of ω-Corson compact spaces, investigated by Nakhmanson and Yakovlev as well as Marciszewski, Plebanek and Zakrzewski called NY compact spaces. For a Tychonoff space X, let $C_p(X)$ be the space of real continuous functions on the space X, endowed with the pointwise convergence topology.

We will show that classes of NY compact spaces and ω-Corson compact spaces K are invariant under linear homeomorphisms of function spaces $C_p(K)$.

References

[1] L.B. Nakhmanson and N.N. Yakovlev, *Bicompacta lying in σ-products*, Comment. Math. Univ. Carolin. 22 (1981), no. 4, 705–719.

[2] W. Marciszewski, G. Plebanek, K. Zakrzewski, *Digging into the classes of κ-Corson compact spaces*, Isr. J. Math., accepted.