On κ - Corson compact spaces and related classes of compacta

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Recall that a compact space K is Eberlein compact if it can be embedded into some Banach space X equipped with the weak topology. A compact space K is κ-Corson compact if, for some set Γ, K is homeomorphic to a subset of the Σ_κ-product of real lines $\Sigma_\kappa(R^\Gamma)$, i.e. the subspace of the product R^Γ consisting of functions with supports smaller than κ. While trying to examine these classes systematically one discovers quickly that the case $\kappa = \omega$ is quite special. Clearly, every ω-Corson compact space is Eberlein compact. We will present a characterization of ω-Corson compact spaces, and some other results concerning this class of spaces and related classes of compact spaces. This is a joint research with Witold Marciszewski and Grzegorz Plebanek.