Richard N. Ball, Anthony W. Hager
Network character and tightness of the compact–open topology

Abstract: For Tychonoff X and α an infinite cardinal, let $\alpha def X :=$ the minimum number of α cozero-sets of the Čech-Stone compactification which intersect to X (generalizing $\mathbb{R}$-defect), and let $rtX := \min_\alpha \max(\alpha, \alpha def X)$. Give $C(X)$ the compact-open topology. It is shown that $\tau C(X) \leq n\chi C(X) \leq rtX = \max(L(X), L(X)def X)$, where: τ is tightness; $n\chi$ is the network character; $L(X)$ is the Lindelöf number. For example, it follows that, for X Čech-complete, $\tau C(X) = L(X)$. The (apparently new) cardinal functions $n\chi C$ and rt are compared with several others.

1