Kočinac, Ljubiša D. R.; **Mukhamadiev, Farkhod G.**
Some properties of the N_τ^φ-nucleus. (English) Zbl 07653723
Topology Appl. 326, Article ID 108430, 9 p. (2023)

The concept of complete linked system of a topological space was introduced in [*A. V. Ivanov*, Sib. Math. J. 27, 863–875 (1986; Zbl 0625.54012); translation from Sib. Mat. Zh. 27, No. 6(160), 95–110 (1986)]. *T. Mahmoud* [Mosc. Univ. Math. Bull. 50, No. 4, 13–17 (1995; Zbl 0876.54021); translation from Vestn. Mosk. Univ., Ser. I 1995, No. 4, 14–19 (1995)] established that the Shanin number of the space of complete linked systems does not exceed the Shanin number of the space itself. *T. K. Yuldashev* and *F. G. Mukhamadiev* [Lobachevskii J. Math. 42, No. 12, 3043–3047 (2021; Zbl 1485.54008)] has obtained more general results.

Theorem Let X be an infinite compact space and τ be any infinite cardinal. Then the cardinal τ is caliber for the space N^*X iff τ is caliber for the space λ^*X.

This paper studies the behavior of the density and the network of π-weight of topological spaces under the influence of the N_τ^φ-kernel of a space X. It is established that the N_τ^φ-kernel of a space X preserves the density and the network π-weight. It is also shown that the N-compact kernel of a space X preserves the weight, density, Souslin property and π-network weight.

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MSC:

18A22   Special properties of functors (faithful, full, etc.)
18F60   Categories of topological spaces and continuous mappings
54A25   Cardinality properties (cardinal functions and inequalities, discrete subsets)

Keywords:

Souslin number; weight; density; complete linked systems; N_τ^φ-kernel; N-compact kernel

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