PROPERTIES OF LOCAL CLOSURE FUNCTIONS IN IDEAL TOPOLOGICAL SPACES

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A triple $\langle X, \tau, \mathcal{I}\rangle$, where $\langle X, \tau\rangle$ is a topological space and $\mathcal{I}$ an ideal on X is known as *ideal topological space*. In it, a local function for a set $A \subset X$, defined by $A^* = \{x \in X : A \cap U \notin \mathcal{I} \text{ for each } U \in \tau(x)\}$, is a generalization of topological closure (for more details see [2]). A. Al–Omari and T. Noiri [1] defined a generalization of θ-closure $\Gamma(A) = \{x \in X : A \cap \mathrm{Cl}(U) \notin \mathcal{I} \text{ for each } U \in \tau(x)\}$, called *local closure function*. We examine differences and similarities between those two functions depending on properties of the topological space and the ideal. We extend results published in [3] by results considering closure compatibility, idempotency of Γ and cases when $\Gamma(X) = X$.

References

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[2] D. Janković, T.R. Hamlett, *New Topologies from Old via Ideals*, Amer. Math. Monthly, 97(4) (1990), 295-310.

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