ON m-IRREDUCIBILITY OF $\mathcal{M}$-SPACES

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Abstract. We introduce m-irreducible spaces and infratopological spaces. These notions generalize notions of topological space and irreducible space [T. Thompson, *Characterizations of irreducible spaces*, Kyungpook Math. J., **21**(2) (1981), 191–194]. Characterizations of m-T_2 spaces and characterizations of m-irreducible spaces are obtained. Our research leads to several generalizations of some well-known results.

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Key words. Infraspace, supraspace, m-Hausdorff, m-irreducible, m-α-open, m-semi-open, $\mathcal{M}$-continuity.

REFERENCES

[1] Levine, N., *Semi-open sets and semi-continuity in topological spaces*, Amer. Math. Monthly, **70** (1963), 36–41.

[2] Maki, H., *On generalizing semi-open sets and preopen sets*, Report for Meeting on Topological Spaces Theory and its Applications, 24-25 August 1996, Yatsushiro College Tech., 13–18.

[3] Maki, H., Chandrasekhara Rao, K. and Nagoor Gani, M., *On generalizing semi-open sets and preopen sets*, Pure Appl. Math. Sci., **49** (1999), 17–29.

[4] Mashhour, A.S., Abd El-Monsef, M.E. and El-Deeb, S.N., *On precontinuous and weak precontinuous mappings*, Proc. Math. Phys. Soc. Egypt, **53** (1982), 47–53.

[5] Mashhour, A.S., Abd El-Monsef, M.E. and Hasanein I.A., *On pretopological spaces*, Bull. Math. Soc. Math. R. S. Roumanie, **28(76)** (1984), 39–45.

[6] Mashhour, A.S., Allam, A.A., Mahmoud, F.S. and Khedr, F.H., *On supratopological spaces*, Indian J. Pure Appl. Math., **14** (1983), 502–510.

[7] Njåstad, O., *On some classes of nearly open sets*, Pacific J. Math., **15** (1965), 961–970.

[8] Noiri, T., *On α-continuous functions*, Čas. Pěst. Mat., **109** (1984), 118–126.

[9] Noiri, T. and Popa, V., *On decompositions of continuity in topological spaces*, Acta Math. Hungar., **128** (2010), 175–189.

[10] Popa, V. and Noiri, T., *On $\mathcal{M}$-continuous functions*, Anal. Univ. "Dunărea de Jos" Galaţi, Ser. Mat. Fiz. Mec. Teor., Fasc. II, **18**(23) (2000), 31–41.

[11] Thompson, T., *Concerning certain subsets of non-Hausdorff topological spaces*, Boll. Unione Mat. Ital., (5), **14**-A (1977), 34–37.

[12] Thompson, T., *Characterizations of irreducible spaces*, Kyungpook Math. J., **21** (1981), 191–194.

[13] Weston, J.D., *Some theorems on cluster sets*, J. London Math. Soc., **33** (1958), 435–441.

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