

Swapan Kumar Ghosh

Intersections of minimal prime ideals in the rings of continuous functions

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Abstract: A space X is called μ -compact by M. Mandelker if the intersection of all free maximal ideals of $C(X)$ coincides with the ring $C_K(X)$ of all functions in $C(X)$ with compact support. In this paper we introduce ϕ -compact and ϕ' -compact spaces and we show that a space is μ -compact if and only if it is both ϕ -compact and ϕ' -compact. We also establish that every space X admits a ϕ -compactification and a ϕ' -compactification. Examples and counterexamples are given.

Keywords: minimal prime ideal, P -space, F -space, μ -compact space, ϕ -compact space, ϕ' -compact space, round subset, almost round subset, nearly round subset

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