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Which topological spaces have a weak reflection in compact spaces?

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Abstract: The problem, whether every topological space has a weak compact reflection, was answered by M. Hušek in the negative. Assuming normality, M. Hušek fully characterized the spaces having a weak reflection in compact spaces as the spaces with the finite Wallman remainder. In this paper we prove that the assumption of normality may be omitted. On the other hand, we show that some covering properties kill the weak reflectivity of a noncompact topological space in compact spaces.

Keywords: weak reflection, Wallman compactification, filter (base), net, θ -regularity, weak $[\omega_1, \infty)^r$ -refinability

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