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Composition and discrete convergence

Joint work with Dávid Uhrik

A sequence of functions converges discretely if their values are equal to the limit function for all but finitely many indices. We are interested in topological space X such that any function from a chosen family of functions on X is a discrete limit of continuous functions. The considered families are the families of all upper or lower semicontinuous functions, all Borel measurable functions etc.

One of results has been shown using composition theorem by A. Lindenbaum [1] which was originally proved for real line. We show that it is valid in perfectly normal topological space as well.

[1] Lindenbaum A., *Sur les superpositions des fonctions représentables analytiquement,* Fund. Math. **23** (1934), 15–37.