Inverse limits of set-valued functions

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Abstract

Continua as inverse limits have been studied for a long time. One reason for such intense research in this area is the fact that inverse sequences with very simple spaces and simple bonding maps can give extremely complicated continua. Even in the case, where all the spaces are unit intervals [0, 1] and all the bonding maps are the same, the resulting inverse limit may be very complicated.

A new concept of inverse limits of inverse sequences with upper semicontinuous set-valued bonding functions was introduced in 2004 by W. S. Mahavier and W. T. Ingram [11, 13]. It has already proved to be very useful at constructing new interesting spaces. It also produced many new techniques to study important properties of topological spaces. The concept of these generalized inverse limits has become very popular since their introduction and has been studied by many authors and many papers appeared.

In the talks we will look closely to the definition of generalized inverse limits and study some of their properties. We will also produce some interesting examples of continua using the generalized inverse limits.

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