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SOME REMARKS ON L-VALUED CATEGORIES [1]

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Since the first introduction of the concept of a fuzzy set by L.A. Zadeh [7] and its generalization by J.A. Goguen [2] in the second half of the 20th century, fuzzy analogues of basic concepts of classical mathematics were introduced and investigated. Among them was the concept of an L-valued category which was first introduced in [4] by A. Shostak under the name of a fuzzy category. Further the examples of some concrete L-valued categories were presented and studied in [5], [6]. In [5] some elements of the general theory of fuzzy categories were developed, namely, fuzzy analogues of the concepts of subcategory, quotient category, functor, special morphisms and special objects were considered.

In the present work we describe and study fuzzy analogues of such special constructions in the framework of L-valued categories as: product, coproduct, pullback and pushout.

These constructions as well as the notions defined previously in [5] are ivestigated in the case of L-valued POS category – the category which objects are fuzzy partially ordered sets and morphisms are "potential" order preserving mappings.

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