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CONTINUITY POINTS OF FUNCTIONS ON PRODUCT SPACES

Abstract

The paper is devoted to joint and separate connectivity properties of functions on product spaces. Examples, generalized types of continuity and quasicontinuity points of separately connected functions are studied.

Introduction and Preliminary Examples

Many authors consider the notion of local w^* continuity as a suitable tool for investigation of relationship between continuity and connectivity [3], [6], [7], [10]. There arises a question whether it is possible to define a point version of local w^* continuity. Another motivation of this paper is to find the weakest assumptions on spaces X , Y and Z as well as on continuity types of the sections f_x and f_y of a function $f : X \times Y \rightarrow Z$ such that f has at least one point of joint continuity [9]. From this point of view it seems to be closely related to the following properties of functions:

- quasi and almost continuity,
- O-connectedness,
- cliquishness,
- local w^* continuity.

Key Words: quasicontinuity, connectivity, separation properties

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