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by

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UNIFORMLY PATH CONNECTED HOMOGENEOUS CONTINUA

JANUSZ R. PRAJS

Abstract. It is proven that every path connected homogeneous continuum is uniformly path connected, which answers a question of David P. Bellamy. From this result it follows that every path connected homogeneous continuum is continuously equivalent either to an arc, or to the Cantor fan.

Homogeneous path connected continua have been attracting attention for several decades [2] [3] [10] [13] [14] [16]. The main focus has been on finding additional structural properties of these continua, which would define some "small" classes of spaces containing all such continua. In [10] Krystyna Kuperberg asked whether every homogeneous path connected continuum is locally connected. This question was answered in the negative by the author [13]. Interestingly, if a continuum X is path connected and admits a topological group structure, then X is locally connected [8, Theorem 9.68]. Also, if X is path connected and isometrically homogeneous, then it is locally connected [15]. In [14] the author has shown that path connected homogeneous continua are weakly chainable, that is, they are continuous images of the pseudo-arc.

In [2], David P. Bellamy asked whether every homogeneous path connected continuum is uniformly path connected, and presented a substantial partial result related to this question. In this paper we answer Bellamy's question in the affirmative.

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