

TWO MOORE SPACES ON WHICH EVERY CONTINUOUS REAL-VALUED FUNCTION IS CONSTANT

By

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Abstract We construct two Moore spaces on which every continuous real-valued function is constant. The first is Moore, screenable and the second, Moore separable. As corollaries we obtain two more Moore spaces on which every continuous real-valued function is constant (a Moore separable and a Moore, screenable) and having a dispersion point.

Key words: Moore, metacompact, screenable, separable, dispersion point.

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§ 1. Introduction.

Moore spaces on which every continuous real-valued function is constant are given in [1], [2], [7], [8]. The space by J.N. Younglove [8] is, in addition locally connected, complete and separable and the space in [2], by H. Brandenburg and A. Mysior, metacompact.

We construct two Moore spaces on which every continuous real-valued function is constant. The first is Moore, screenable (hence metacompact, since every developable screenable space is metacompact [4]) and the second, Moore separable. As corollaries we obtain two more Moore spaces on which every continuous real-valued function is constant (a Moore separable and a Moore, screenable) and having a dispersion point.

In order to construct these spaces, we first consider two auxiliary spaces (a Moore, screenable for the first space and a Moore separable for the second) containing two points not separated by a continuous real-valued function. Then we construct an appropriate Moore space (which is screenable in the first case or separable in the second) on which, with the help of a sequence of functions, we define a decomposition. Finally, on the quotient set we define a topology and we prove that this, in each case, is the required space.