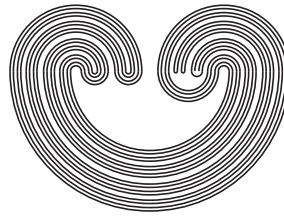


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SPACES WITH REGULAR NONABELIAN SELF COVERS II

by

MATHEW TIMM

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MATHEW TIMM

ABSTRACT. We produce a disk with countably many holes which has, for each finite group G , a regular self cover with group of deck transformations isomorphic to G . This disk with holes is then used to produce other examples of continua with the same self covering property.

This is the second of two papers motivated by the problem of finding continua X which have regular self covers $f : X \rightarrow X$ with a nonabelian group of deck transformations. In the first paper, joint work with Alberto Delgado [7], the question about existence of such spaces is answered very strongly in the affirmative. It is shown that there are two metric continua, one infinite dimensional and one 1-dimensional, which have the property that given any finite group G , each of the continua has a regular $|G|$ -fold self cover with the associated group of deck transformations isomorphic to G . Thus, each of these continua satisfies the *universal regular finite-sheeted (URF) self cover property*: they have regular self covers with group of deck transformations isomorphic to G for *every* finite group G . Consequently, these continua have regular self covers with deck transformations isomorphic to every finite nonabelian G . The one dimensional continuum turns out to be homeomorphic to the Sierpinski curve (aka, the Sierpinski carpet) \mathcal{S} .

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Key words and phrases. Regular covering space, disk with holes, control set, patterned space, Sierpinski curve, non-cohopfian group.

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