

On Slovak and almost Slovak spaces

BOROŃSKI Jan, ČINČ Jernej and FORYŚ-KRAWIEC Magdalena¹

¹ *AGH University of Science and Technology, Kraków, Poland*
E-mail maforys@agh.edu.pl

A Slovak space is a compact metric space whose group of homeomorphisms is cyclic and generated by some minimal homeomorphism. If the group of homeomorphisms $H(X)$ of a compact metric space X has the property that:

$$H(X) = H_+(X) \cup H_-(X), \text{ with } H_+(X) \cap H_-(X) = \{id_X\}$$

where $H_+(X)$ is cyclic, generated by a minimal homeomorphism and for every $g \in H_-(X)$ we have $g^2 \in H_+(X)$, then X is referred to as an almost Slovak space.

Motivated by the results of [1] and [2] we prove that there exist almost Slovak spaces that are not Slovak. Moreover, we construct the whole class of minimal spaces without minimal noninvertible maps that are neither Slovak space, nor the circle \mathbb{S}^1 . We modify the obtained class of examples to show the existence of minimal spaces with degenerate homeomorphism groups. We also prove the existence of decomposable Slovak spaces.

References

- [1] J. Boroński, A. Clark, P. Oprocha, *A compact minimal space Y such that its square $Y \times Y$ is not minimal*, Adv. Math., **335** (2018), 261–275,
- [2] T. Downarowicz, L. Snoha, D. Tywoniuk *Minimal spaces with cyclic group of homeomorphisms*, J. Dyn. Diff. Equat. (2015)