

## SEMIGROUP OF CONTRACTIONS OF WREATH PRODUCTS OF METRIC SPACES\*

BOGDANA OLIYNYK

*Department of Informatics,  
Kyiv–Mohyla Academy, Ukraine*

**e-mail:** bogd@ukma.kiev.ua

### Abstract

In this paper semigroups of contractions of metric spaces are considered. The semigroup of contractions of the wreath product of metric spaces is calculated.

**Keywords:** metric space, wreath product, semigroup of contractions.

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### REFERENCES

- [1] F. Harary, *On the group of the composition of two graphs*, Duke Math J. **26** (1959), 47–51. doi:10.1215/S0012-7094-59-02603-1
- [2] G. Sabidussi, *The composition of graphs*, Duke Math J. **26** (1959), 693–696. doi:10.1215/S0012-7094-59-02667-5
- [3] I.J. Schoenberg, *Metric spaces and completely monotone functions*, The Annals of Mathematics **39** (4) (1938), 811–841. doi:10.2307/1968466
- [4] B. Oliynyk, *Isometry groups of wreath products of metric spaces*, Algebra and Discrete Mathematics **4** (2007), 123–130.
- [5] I.D. Meldrum, *Wreath products of groups and semigroups*, New York, Longman 1995.

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- [6] A. Oliinyk, *On Free Semigroups of Automaton Transformations*, Mathematical Notes **63** (2) (1998), 248–259. doi:10.1007/BF02308761
- [7] J. Rhodes, *Monoids acting on trees: Elliptic and wreath products and the holonomy theorem for arbitrary monoids with applications to infinite groups*, Int. J. Algebra Comput. **1** (2) (1991), 253–279. doi:10.1142/S0218196791000171

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