

44th Summer Symposium in Real Analysis

Participant

Family name : Horbaczewska

First name : Grażyna

Institution : University of Lodz, Faculty of Mathematics and Computer Science

Email : grazyna.horbaczewska@wmii.uni.lodz.pl

Title of the talk

On the operator of center of distances between the spaces of closed subsets of the real line

Coauthor(s)

Artur Bartoszewicz, Małgorzata Filipczak, Sebastian Lindner, Franciszek Prus-Wiśniowski

Abstract

We study properties of an operator S which assigns to compact subsets of $[0, 1]$ their centers of distances. We consider its continuity points and its upper semicontinuity points as well as orbits and fixed points of this operator. We also compute centers of distances of some classic sets.

References

- [1] M.F. Barnsley, *Fractals Everywhere*, Academic Press, 2nd edition, 1993.

- [2] T. Banach, A. Bartoszewicz, M. Filipczak, E. Szymonik, *Topological and measure properties of some self-similar sets*, Topol. Methods Nonlinear Anal. 46 (2015), 1013-1028.
- [3] A. Bartoszewicz, M. Filipczak, F. Prus-Wiśniowski, *Topological and algebraic aspects of subsums of series*, In: Traditional and Present-day Topics in Real Analysis, Faculty of Mathematics and Computer Science, University of Łódź, Łódź (2013), 345-366.
- [4] A. Bartoszewicz, S. Głąb, J. Marchwicki, *Recovering purely atomic finite measure from its range*, J. Math. Anal. Appl. 467(2), (2018), 825-841.
- [5] A. Bartoszewicz, S. Głąb, M. Filipczak, F. Prus-Wiśniowski, J. Swaczyna, *On generating regular Cantorvals connected with geometric Cantor sets*, Chaos Solitons Fractals 114, (2018), 468-473.
- [6] W. Bielas, S. Plewik, M. Walczyńska, *On the center of distances*, European Journal of Mathematics (2018),4 , 687-698.
- [7] J.A. Guthrie, J.E. Nymann, *The topological structure of the set of subsums of an infinite series*. Colloq. Math. 55(2), 323-327 (1988)
- [8] R. Jones, Achievement sets of sequences, Amer. Math. Monthly 118(6), (2011), 508-521.
- [9] K. Kuratowski, *Topology*, Vol II, Academic Press, 1968.
- [10] P. Mendes, F. Oliveira, *On the topological structure of the arithmetic sum of two Cantor sets*, Nonlinearity 7, (1994) 329-343.
- [11] Z. Nitecki, *Cantorvals and Subsum Sets of Null Sequences*, Amer. Math. Monthly 122(9), (2015) 862-870.
- [12] J.E. Nymann, R.A. Sáenz, *On the paper of Guthrie and Nymann on subsums of infinite series*, Colloq. Math. 83, (2000) 14.
- [13] C.A. Rogers, *Hausdorff Measures*, Cambridge University Press, 1970.
- [14] B. Santiago, *The semicontinuity lemma* (2012),
Preprint:<http://www.professores.uff.br/brunosantiago/wp-content/uploads/sites/17/2017/07/01.pdf>