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by

MARTA ŠTEFÁNKOVÁ

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Department of Mathematics & Statistics

Auburn University, Alabama 36849, USA

E-mail: topolog@auburn.edu

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THE SHARKOVSKY PROGRAM OF CLASSIFICATION OF TRIANGULAR MAPS – A SURVEY

MARTA ŠTEFÁNKOVÁ

ABSTRACT. For continuous interval maps there are more than 50 mutually equivalent conditions characterizing maps with zero topological entropy. At the end of the 1980s, A. N. Sharkovsky proposed to verify which of the implications among these conditions are valid in the class of triangular maps of the unit square. Since some conditions are not applicable to maps of the square, whereas some new conditions have been added thereafter, the contemporary list usually contains 32 conditions which means nearly 1,000 possible implications. This huge program has been recently completed and the aim of this paper is to give a survey of the results.

1. INTRODUCTION

Recently a paper concluding the so-called Sharkovsky classification program of triangular maps was published (see [10]). The program was announced in late 1980s and the work on it lasted for 25 years. During this time 16 authors created 24 papers devoted directly to this problem (these papers are in the references marked by *) and many other authors contributed to this subject, for example, by providing alternative and more straightforward solutions of problems formulated in this program. (Almost 70 papers related to this program are known to the author.)

Let (X, ρ) be a compact metric space with a metric ρ , let $\mathcal{C}(X)$ be the class of continuous maps from X to itself, and let $I = [0, 1]$ be the

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