

ALTERNATIVE CHARACTERIZATIONS OF AGIFSs HAVING ATTRACTOR

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Abstract. In this paper we study affine generalized iterated function systems (for short AGIFSs) which are particular cases of the concept of generalized iterated function system introduced by R. Miculescu and A. Mihail. Using a technique introduced by F. Strobin and J. Swaczyna, we associate to each $n \in \mathbb{N}^*$ and each AGIFS \mathcal{F} a new AGIFS \mathcal{F}_n . Our main result states that the following statements are equivalent: a) \mathcal{F} has attractor. b) There exists $n \in \mathbb{N}^*$ such that \mathcal{F}_n has attractor. c) There exists $n \in \mathbb{N}^*$ such that \mathcal{F}_n is hyperbolic. d) There exists $n \in \mathbb{N}^*$ such that \mathcal{F}_n is topologically contractive.

Key Words and Phrases: Affine generalized iterated function system (AGIFS), attractor, hyperbolic AGIFS, topologically contractive AGIFS.

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