

Title: Dynamics on labels

Author: Marat Akhmet

Affiliation: Middle East Technical University, Ankara, Turkey

e-mail: marat@metu.edu.tr

Dynamics on labels (Domain structured Dynamics) introduces a way for analysis of chaos in fractals, neural networks and random processes. It starts with newly invented abstract similarity sets and maps, which are in the basis of the abstract similarity dynamics. Then a labeling procedure is designed to determine the domain structured dynamics. The results follow the Pythagorean doctrine, considering finite number of indices for the labeling, with potential to become universal in future. The immediate power of the approach for fractals as domains of chaos, revisited famous deterministic and stochastic models, new types of differential equations and neural networks is seen in the book. This is not considered through widening areas, where the notions can be seen and recognized, but by deepening abstraction.