



DEPARTAMENTO
DE ANÁLISIS
MATEMÁTICO Y
MATEMÁTICA
APLICADA



SEMINARIO DE ANÁLISIS MATEMÁTICO Y MATEMÁTICA APLICADA

Marat Akhmet

Middle East Technical University

LABELING AND UNPREDICTABILITY

- 1) Beside the numbers and sets, we have introduced a new structure, “labels” to be in serve for science. The structure consists of abstract similarity sets in a special relation and the abstract similarity map. The structure can be in use for research of complexity of real world problems and industry. In mathematics, it can be considered for geometry (fractals), theory of functions, relations of deterministic and stochastic processes, chaos (deterministic), probability, differential equations. For dynamics purposes, we suggest abstract similarity dynamics in the structure, which is used to describe dynamics on labels (domain structured dynamics), which can adjoint with many complex processes. The talk will be about examples of application of the structure.
- 2) The modern types of recurrent functions and oscillations are not sufficient to reflect the world’s dynamics. Unfortunately, one can understand this, if only starts to consider a new function. In our research, the line of the functions has been prolonged with the unpredictable ones. We shall show in the talk, how chaotic dynamics can be individualized by considering proper features for a function. This is useful for stochastic dynamics, too, if connected to the labeling results. The unpredictability has been resulted in differential equations, stochastic differential equations, neural networks, gas-discharge semiconductor systems. Outline of the results to be delivered.

In the talk, technical details are avoid, we shall focus on the ideas and history of the concepts. The discussion may be of interest, to all who works with modelling, theory of functions, geometry, differential equations, theory of dynamical systems, chaos and history of mathematics and science.

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**Fecha: Lunes 10 de octubre de 2022
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Lugar: Aula Alberto Dou
Facultad de CC Matemáticas, UCM**