ÇANKAYA UNIVERSITY
FACULTY OF ARTS AND SCIENCES
DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCES

SEMINAR

Replication of Chaos:
Theory and Applications

SPEAKER : **Prof. Dr. Marat Akhmet**
(Recipient of the TÜBİTAK 2015 Science Award)

DATE : **19 February, 2016**

TIME : **13:30**

PLACE : **Çankaya University (Central Campus),**
Blue Hall (Mavi Salon)

Abstract

We will introduce our results on mathematical chaos based on input-output analysis. The novelty achieved in the chaos investigation allow us to to discuss fundamental question of chaos theory existence. It will be shown that chaos analysis brings finite dimensional dynamics close to infinite dimensional one. That replication of chaos can be considered relative to Alan Turing morphogenesis concept as well as Il'ya Prigozhin theory of dissipative structures and synergetics of Herman Haken. Moreover, we will say about our results as a contribution to the self-organization theory. As a particular application you will see how a linear Cantor set can be extended in three dimensional space. Why is the weather unpredictability global? Why is an economical crisis unpredictable and global? What is chaos role for brain activity and robotics? We will consider the questions in the framework of our theory. These and many other aspects of dynamical systems as well as mathematics globally are concerned to what we are busy with last ten years. Some of them can be found in our last book:

M. Akhmet& O. Fen, Replication of chaos in neural networks, economics and physics, Springer&HEP, 2015.

All interested are cordially invited.
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