ISSN 2066-8570

## MODELING OF THE HUMAN RESOURCES AS DYNAMICAL SYSTEMS

## Marcel ILIE<sup>1</sup>, Augustin SEMENESCU<sup>2</sup>

**Rezumat.** Obiectul acestui studiu este modelarea resurselor umane folosind sistemele dinamice. In general, munca in echipa este distribuita intre menrii echipei care au un scop comun. Oricum, interactiunile complexe dintre menbrii echipei pot conduce la indeplinirea sarcinlor cu success sau fara. In mediile stintifice de cercetare, unde echipe international pot lucra impreuna, interactiunea dintre membrii echipei pot defini incheierea cu sucess a proiectului. Oricum, dinamica echipei poate fi una dificila si presupune multe provocari. In acest studiu porpunem un model matematic pentru simularea dinamicii echipei ca ssitem dinamic.

**Abstract.** This research concerns the modelling of human resources as dynamical systems. Generally team work is distributed among the members of the team which have a common goal. However, the complex interactions of the team's members may lead to successful or unsuccessful completion of the tasks. For scientific research, where international teams may work together on common project, the interaction among team members defines the successful completion of the project. However, the team's dynamics is a cumbersome one and poses significant challenges. In this research we propose a computational model which models the team's dynamics as a dynamic systems.

Keywords: numerical modeling, dynamical systems, team dynamics, human resources

DOI https://doi.org/10.56082/annalsarscieng.2021.1.17

## 1. Introduction

The group and team interactions have been of interest for many decades [1-3, 5-16]. Some of these studies concerned the conflict between the labor unions and manages within the organization [16]. It was acknowledged that although the work conflict is not explicitly expressed it is always present in any organization or society and has to be avoided at any cost [6, 8]. Usually these

<sup>&</sup>lt;sup>1</sup>PhD, Assistant Professor: Dept. of Mechanical Engineering, Georgia Southern University, Statesboro, GA 30458, USA, e-mail: milie@georgiasouthern.edu

<sup>&</sup>lt;sup>2</sup>PhD, Professor, Dept. of Material Sciences, University Politehnica Bucharest, Bucharest, Romania, augustin.semenescu@upb.ro