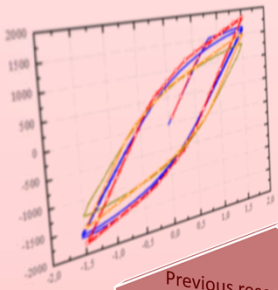
DEVELOPMENT OF EVOLUTIONARY PROCEDURES FOR CHARACTERIZATION OF BIOLOGICAL TISSUES BEHAVIOR



Team members

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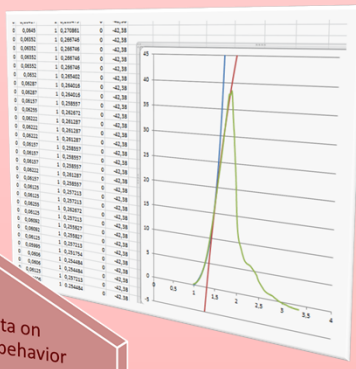
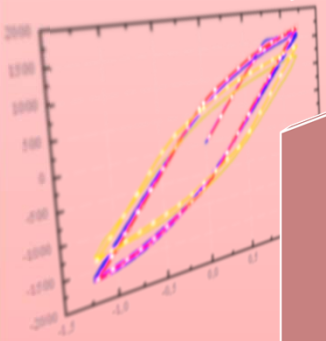
Motivation

- Previous research results of modeling of metallic material behavior
- Effective algorithms for parameter identification development
- Advantageous mechanical properties of biological materials
- Development of innovative materials

Goals

- Experimental setup - Recording of materials response
- Development of application for data acquisition
- Mathematical description of physical principles
- Objective function - Genetic algorithm operators
- Efficiency evaluation of selected procedure
- Automation of material parameters identification
- Finite element generation - Material behaviour simulation





Methodology

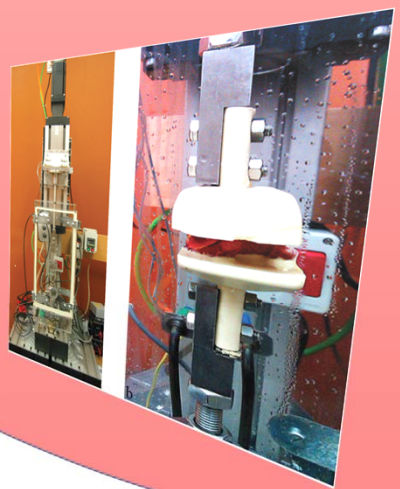
- Experimental procedures
- Mathematical modeling
- Optimization
- Simulation

Results

- Experimental data on biological material behavior
- Effective genetic algorithm for parameter identification of biological materials
- Automated system for modeling of material behavior
- Material behavior simulation

- Collection of information on complex material models
- Research on innovative materials
- Expanding areas of research of material behavior
- Cooperation with international research groups
- Achieving recognition of researchers and institutions
- Development of Web Application

- Information basis on innovative materials
- Information on complex material models
- Self-sustainable system



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