Abstracts of Dr.hab. Theses

Title: Mathematical modelling of dynamical processes
(dr. hab. theses)

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Abstract

The thesis is devoted to mathematical modelling of time-varying unsteady processes. Not long ago main problems of modelling were accumulated in military domain, but now modelling is applied to solving of ecological, medical, transport etc. problems more widely. The investigated problems are complicate enough and do not allow getting analytical solutions. The thesis consists of an introduction, five chapters, cited literature list and an application. All chapters are joined by common approach to investigated problems. New numerical methods are created and existing ones are adapted for these problems solving. Mathematical and numerical models of various processes of mechanics of continua are constructed in the thesis. All problems naturally appear from everyday practice. All algorithms proposed and programs are approved successfully and are used in calculation in various scientific organizations and private firms.

The thesis is written in Romanian.