Mathematical modeling of complex dynamical systems

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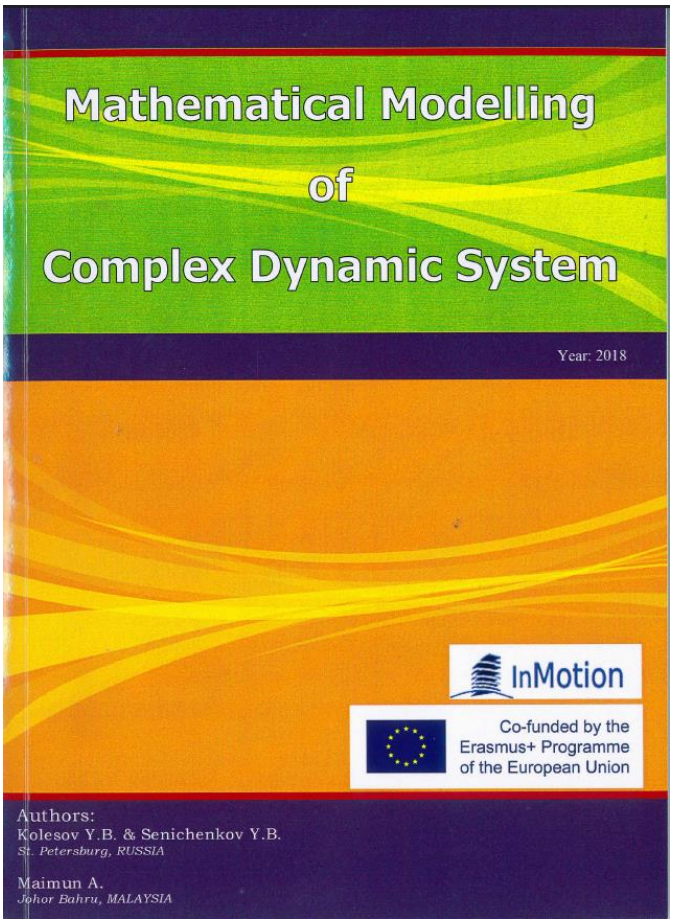
Textbook abstract



Mathematical modelling is widely used in modern production and requires well-trained professionals capable of:

- create complex models using modelling environments,
- study their properties by conducting computational experiments,
- and apply on them to solve practical problems.

One of the most popular practices type of models are complex dynamic systems. Models based on ordinary differential and difference equations have long been used in the design of new devices, but, if earlier modelling was mainly engaged in mathematics, now with the advent of computer simulation environment, the design based on simulation can and should be engaged with engineers.

The purpose of this book is to tell the engineers about special type of mathematical model – dynamic systems, methods of research of these systems, their properties, the possibility of their research will help of modern mathematical packages. Create and explore models using the

variety of computer environments, and make it easier and more effective if know the basic theory.

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Target group

The book is intended for bachelors and masters of all engineering specialties related with computer modeling and simulation of complex dynamical systems.

Book imprints

Kolesov Yu.B., Senichenkov Yu.B. Mathematical modeling of complex dynamical systems*:* textbook*.* ISBN 978-5-7422-6684-3 - St. Petersburg : Polytech-Press, 2019.

The textbook was translated in English by prof. Maimun A. from University Technology Malaysia, Johor Bahru.