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Control Theory: General methods of controlling the complex systems arising in Engineering and Applied Sciences.

Short description:

It is an introduction to modern mathematical Control Theory. The theory is illustrated by numerous examples from engineering, technology, economy, biology, medicine, and physics.

Description:

It is an introduction to modern mathematical Control Theory. The theory is illustrated by numerous examples from engineering, technology, economy, biology, medicine, and physics. In particular the following topics are presented:

Controllability for linear and nonlinear systems;

Bang-bang principle;

time-optimal control,

Lagrange problem, Mayer problem;

Boltza Problem;

existence of optimal control;

Pontriagin Maximum Principle;

transversality condition;

dynamic programming.

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