DESCRIPTION

This volume covers theoretical advances and developments, computational challenges and tools as well as applications in the area of multi-parametric model based control.

Part I is concerned with the presentation of algorithms for parametric model based control focusing on:

- novel frameworks for the derivation of explicit optimal control policies for continuous time-linear dynamic systems
- new theoretical developments on hybrid model based control
- methods for obtaining the explicit robust model-based tracking control
- theoretical frameworks for parametric dynamic optimization and
- recent developments for continuous-time systems

Part II presents a series of applications in the following areas:

- the incorporation of advanced model based controllers in a simultaneous process design and control framework for complex separation systems
- the development of advanced model based control techniques for regulating the blood glucose for patients with Type 1 diabetes
- the design of model predictive and parametric controllers for anesthesia.
- the development of optimal control policies in a pilot plant exothermic reactor

The volume is intended for academics and researchers that carry out model based control research, industrial practitioners involved in the control of new and existing processes and products, policy makers, as well as for educational purposes both in academia and industry.

ABOUT THE AUTHOR

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Process Systems Enterprise (PSE), provider of the gPROMS advanced process simulation and modelling environment, is the 2007 winner of the Royal Academy of Engineering’s MacRobert Award. The award, the UK’s most prestigious for engineering, recognises the successful development of innovative ideas. The PSE team was presented with the MacRobert gold medal by HRH Prince Philip.
SERIES

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