

Book Announcements

PRESMAN, E. L. and SONIN, I. N., *Sequential Control with Incomplete Information*, Academic Press, 1990, 266 pages.

Purpose: This book deals with a specific problem in the general theory of optimal control: sequential control under conditions of incomplete information.

Contents: Basic schemes in discrete and continuous time; problem formulation and solution methods in discrete and continuous time; solutions of some problems; application of Pontryagin's maximum principle to control problems with random jumps; some other problems in mathematical economics.

CELLIER, F. E., *Continuous System Modeling*, Springer-Verlag, New York, 1991, 755 pages.

Purpose: This book presents detailed concepts of modeling dynamical systems. Specialized software tools such as DYMOLA and STELLA are introduced.

Contents: Basic principles of continuous systems modeling; modeling of passive and active electrical circuits, and planar mechanical systems; hierarchical modular modeling of continuous systems; bond graph modeling; modeling nonequilibrium thermodynamics, chemical reaction kinetics, and population dynamics; system dynamics; naive physics; inductive reasoning; artificial neural networks and genetic algorithms; automated model synthesis.

HÁJEK, O., *Control Theory in the Plane*, Lecture Notes in Control and Information Sciences, Vol. 153, Springer-Verlag, Berlin, 1991, 269 pages, \$42.00.

Purpose: This book is an introduction to the study of control systems governed by ordinary differential equations, with special reference to the two-dimensional phase plane as state space. It is meant for students at the graduate level.

Contents: Examples of control systems; differential equations; control systems; control systems in the plane: local behavior, controllability and attainability, index theory, and optimization.

GAL-OR, B., *Vectored Propulsion, Supermaneuverability, and Robot Aircraft*, Springer-Verlag, Berlin, 1990, 276 pages, \$65.00.

Purpose: This book deals with new aircraft design and flight methodologies. It should be of use for engineers as well as pilots and researchers in this field.

Contents: Fundamental concepts; vectored aircraft and supermaneuverability; matrix of unknown variables of vectored aircraft; vectored aircraft as R&D tools or as super-agile robotic flying systems; partially vectored aircraft; pros and

cons of internal thrust vectoring; powerplant technology limits; nozzle performance and synergetic effects; limiting engine-inlet envelopes and IFPC.

BOHLIN, T., *Interactive Systems Identification: Prospects and Pitfalls*, Springer-Verlag, Berlin, 1991, 365 pages, \$98.00.

Purpose: This book deals with fundamental problems and possibilities of obtaining a mathematical model of a physical object, and what one has to think of in order to do it correctly.

Contents: Randomness, probability, and likelihood; experiment and identification problem; modeling; large-sample theory; validation techniques; falsification techniques; structure identification; a unified design approach.

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