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| 1. Record Nr. | UNINA9910254212003321 |
| Autore | Chmielowski Wojciech Z |
| Titolo | Fuzzy Control in Environmental Engineering // by Wojciech Z. Chmielowski |
| Pubbl/distr/stampa | Cham : , : Springer International Publishing : , : Imprint : Springer, , 2016 |
| ISBN | 3-319-19261-2 |
| Edizione | [1st ed. 2016.] |
| Descrizione fisica | 1 online resource (294 p.) |
| Collana | Studies in Systems, Decision and Control, , 2198-4182 ; ; 31 |
| Disciplina | 629.8 |
| Soggetti | Control engineering Water-supply Computational intelligence Water pollution Environmental sciences Control and Systems Theory Water Industry/Water Technologies Computational Intelligence Waste Water Technology / Water Pollution Control / Water Management / Aquatic Pollution Math. Appl. in Environmental Science |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Note generali | Description based upon print version of record. |
| Nota di bibliografia | Includes bibliographical references. |
| Nota di contenuto | ""Preface""; ""Acknowledgments""; ""Contents""; ""List of Figures""; ""Part I Theoretical Foundations""; ""1 Introduction""; ""1.1 Fuzzification Block (Fuzzification)""; ""1.2 The Base of Fuzzy Rules""; ""1.3 The Mamdani Model""; ""1.3.1 Reasoning Machine (Inference)""; ""1.3.2 Defuzzification""; ""1.4 The Takagi-Sugeno Model""; ""1.5 Controller Adjustment""; ""1.6 Summary""; ""References""; ""Part II Fuzzy Logic Toolbox, Matlab, Simulink""; ""2 Introduction""; ""2.1 FIS Editor""; ""2.2 Membership Function Editor""; ""2.3 Rule Editor, Rule Viewer, Surface Viewer"" ""2.4 ANFIS Adaptive Neuro-Fuzzy Inference System""""2.4.1 The ANFIS Editor""; ""Part III An Application of Descriptive FuzzyControl in Environmental Engineering""; ""3 Fuzzy Controller(s) for a Flood Wave |

Passing Through a Hypothetical Retention Reservoir"; "3.1 Preface";
"3.2 FIS (Fuzzy Inference System) a Control System Using the Mamdani
Controller"; "3.3 A Control System Using the Takagi-Sugeno (ANFIS)
Controller"; "3.4 A Control System for a Retention Reservoir Using
Fuzzy Controllers in a Hierarchical Configuration"; "3.5 Summary";
"References"
"4 Control of a Flood Wave Passage Through the Dobczyce Reservoir
(Poland) Using Fuzzy Controllers""4.1 Preface"; "4.2 Control
According to a Classic Control Rule"; "4.3 Control of Outflow from the
Reservoir Using a Mamdani Fuzzy Controller Type A"; "4.4 Control
Using a Mamdani Fuzzy Controller Type B"; "4.5 Summary"; "5 Fuzzy
Controllers Operating Flood Wave Passage Through a Hypothetical
Cascade of Retention Reservoirs"; "5.1 Preface"; "5.2 Upper
Reservoir, FIS (Fuzzy Inference System)"; "5.3 Lower Reservoir, FIS
(Fuzzy Inference System)""
"5.4 Control System Using Fuzzy Controllers""5.5 Summary";
"Reference"; "6 Using Fuzzy Controllers in Tracking the Vector of
Controlled Trajectories in a Multi-reservoir Water-Management
System"; "6.1 Preface"; "6.2 Optimisation Model"; "6.2.1
Implementation of Simulation and Specification of Results for a
Hypothetical Scenario of Events"; "6.2.2 Summary"; "6.3 An Online
Control System for an Optimisation Model Using Mamdani Structure
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in Structure A"; "6.4 An Online Control System for an Optimisation
Model Using Controllers in the Mamdani Structure (Type B) (MISO)";
"6.4.1 Introduction"; "6.4.2 FIS (Fuzzy Inference System)"; "6.4.3
Control System Using Type B Mamdani Controllers"; "6.4.4
Conclusions Concerning the Use of Mamdani Controllers in Structure
B"; "6.5 An Online Control System for an Optimisation Model Using
Controllers in the Takagi-Sugeno Structure (Types C and D)""
"6.5.1 Introduction"

Sommario/riassunto

This book is intended for engineers, technicians and people who plan to use fuzzy control in more or less developed and advanced control systems for manufacturing processes, or directly for executive equipment. Assuming that the reader possesses elementary knowledge regarding fuzzy sets and fuzzy control, by way of a reminder, the first parts of the book contain a reminder of the theoretical foundations as well as a description of the tools to be found in the Matlab/Simulink environment in the form of a toolbox. The major part of the book presents applications for fuzzy controllers in control systems for various manufacturing and engineering processes. It presents seven processes and problems which have been programmed using fuzzy controllers. The issues discussed concern the field of Environmental Engineering. Examples are the control of a flood wave passing through a hypothetical, and then the real Dobczyce reservoir in the Raba River, which is located in the upper Vistula River basin in Southern Poland, the control and water management in a cascade of reservoirs, a broadly defined combustion process model, modern water heating systems and many other.
