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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- Fractional-order Set-point Weighted Controllers and Approximation Techniques -- Fractional-order Set-point Weighted Controllers -- Approximation Techniques -- Scilab Toolbox For Fractional-order Systems and Controllers -- Scilab Based Toolbox For Fractional-order Systems and PID Controllers -- Scilab Based Toolbox for Fractional-order Chaotic Systems -- Appendix -- Index.
Sommario/riassunto	This book presents a detailed study on fractional-order, set-point, weighted PID control strategies and the development of curve-fitting-based approximation techniques for fractional-order parameters. Furthermore, in all the cases, it includes the Scilab-based commands and functions for easy implementation and better understanding, and to appeal to a wide range of readers working with the software. The presented Scilab-based toolbox is the first toolbox for fractional-order systems developed in open-source software. The toolboxes allow time and frequency domains as well as stability analysis of the fractional-order systems and controllers. The book also provides real-time examples of the control of process plants using the developed fractional-order based PID control strategies and the approximation techniques. The book is of interest to readers in the areas of fractional-order controllers, approximation techniques, process modeling,

control, and optimization, both in industry and academia. In industry, the book is particularly valuable in the areas of research and development (R&D) as well as areas where PID controllers suffice – and it should be noted that around 80% of low-level controllers in industry are PID based. The book is also useful where conventional PIDs are constrained, such as in industries where long-term delay and non-linearity are present. Here it can be used for the design of controllers for real-time processes. The book is also a valuable teaching and learning resource for undergraduate and postgraduate students.
