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Nota di contenuto	Preface -- Introduction -- Mathematics, Statistics and Representations for Cybernetic Systems -- Control and Communication Characteristics of Agricultural Production Systems -- Modeling of Crop Production Systems and System Characterization -- Control Theory and Agricultural Production -- Control of Agricultural production Systems -- Mearning from the Data -- Outlook and Summary Remarks -- Bibliography -- Index.
Sommario/riassunto	Agricultural systems are uniquely complex systems, given that agricultural systems are parts of natural and ecological systems. Those aspects bring in a substantial degree of uncertainty in system operation. Also, impact factors, such as weather factors, are critical in

agricultural systems but these factors are uncontrollable in system management. Modern agriculture has been evolving through precision agriculture beginning in the late 1980s and biotechnological innovations in the early 2000s. Precision agriculture implements site-specific crop production management by integrating agricultural mechanization and information technology in geographic information system (GIS), global navigation satellite system (GNSS), and remote sensing. Now, precision agriculture is set to evolve into smart agriculture with advanced systematization, informatization, intelligence and automation. From precision agriculture to smart agriculture, there is a substantial amount of specific control and communication problems that have been investigated and will continue to be studied. In this book, the core ideas and methods from control problems in agricultural production systems are extracted, and a system view of agricultural production is formulated for the analysis and design of management strategies to control and optimize agricultural production systems while exploiting the intrinsic feedback information-exchanging mechanisms. On this basis, the theoretical framework of agricultural cybernetics is established to predict and control the behavior of agricultural production systems through control theory.