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Titolo	Dynamic Programming for Impulse Feedback and Fast Controls : The Linear Systems Case // by Alexander B. Kurzhanski, Alexander N. Daryin
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Descrizione fisica	1 online resource (XIII, 275 p. 26 illus., 1 illus. in color.)
Collana	Lecture Notes in Control and Information Sciences, , 1610-7411 ; ; 468
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Soggetti	Automatic control System theory Control theory Control and Systems Theory Systems Theory, Control
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Note generali	Includes index.
Nota di contenuto	Introduction: Why Impulses? -- Part I: Ordinary Impulses -- Open-Loop Impulse Control -- Closed-Loop Impulse Control -- Impulse Control under Uncertainty -- State-Constrained Impulse Control -- State Estimation Under Ordinary Impulsive Inputs -- Part II: Impulses of Higher Order. Realizability and Fast Control -- The Open-Loop and Closed-Loop Impulse Controls -- State-Constrained Control under Higher Impulses -- State Estimation and State-Constrained Control -- Generalized Duality Theory: The Increasing and Decreasing Lagrangian Scales -- Realistic Controls -- Closed-Loop Fast Controls -- Appendix: Uniqueness of Viscosity Solutions.
Sommario/riassunto	Dynamic Programming for Impulse Feedback and Fast Controls offers a description of feedback control in the class of impulsive inputs. This book deals with the problem of closed-loop impulse control based on generalization of dynamic programming techniques in the form of variational inequalities of the Hamilton–Jacobi–Bellman type. It provides exercises and examples in relation to software, such as techniques for regularization of ill-posed problems. It also gives an introduction to applications such as hybrid dynamics, control in arbitrary small time,

and discontinuous trajectories. This book walks the readers through: the design and description of feedback solutions for impulse controls; the explanation of impulses of higher order that are derivatives of delta functions; the description of their physically realizable approximations - the fast controls and their approximations; the treatment of uncertainty in impulse control and the applications of impulse feedback. Of interest to both academics and graduate students in the field of control theory and applications, the book also protects users from common errors, such as inappropriate solution attempts, by indicating Hamiltonian techniques for hybrid systems with resets.
