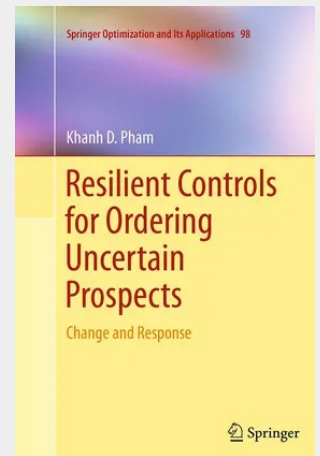


Resilient Controls for Ordering Uncertain Prospects

Change and Response

Providing readers with a detailed examination of resilient controls in risk-averse decision, this monograph is aimed toward researchers and graduate students in applied mathematics and electrical engineering with a systems-theoretic concentration. This work contains a timely and responsive evaluation of reforms on the use of asymmetry or skewness pertaining to the restrictive family of quadratic costs that have been appeared in various scholarly forums. Additionally, the book includes a discussion of the current and ongoing efforts in the usage of risk, dynamic game decision optimization and disturbance mitigation techniques with output feedback measurements tailored toward the worst-case scenarios. This work encompasses some of the current changes across uncertainty quantification, stochastic control communities, and the creative efforts that are being made to increase the understanding of resilient controls. Specific considerations are made in this book for the application of decision theory to resilient controls of the linear-quadratic class of stochastic dynamical systems. Each of these topics are examined explicitly in several chapters. This monograph also puts forward initiatives to reform both control decisions with risk consequences and correct-by-design paradigms for performance reliability associated with the class of stochastic linear dynamical systems with integral quadratic costs and subject to network delays, control and communication constraints.

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