Mathematical Control Theory and Finance

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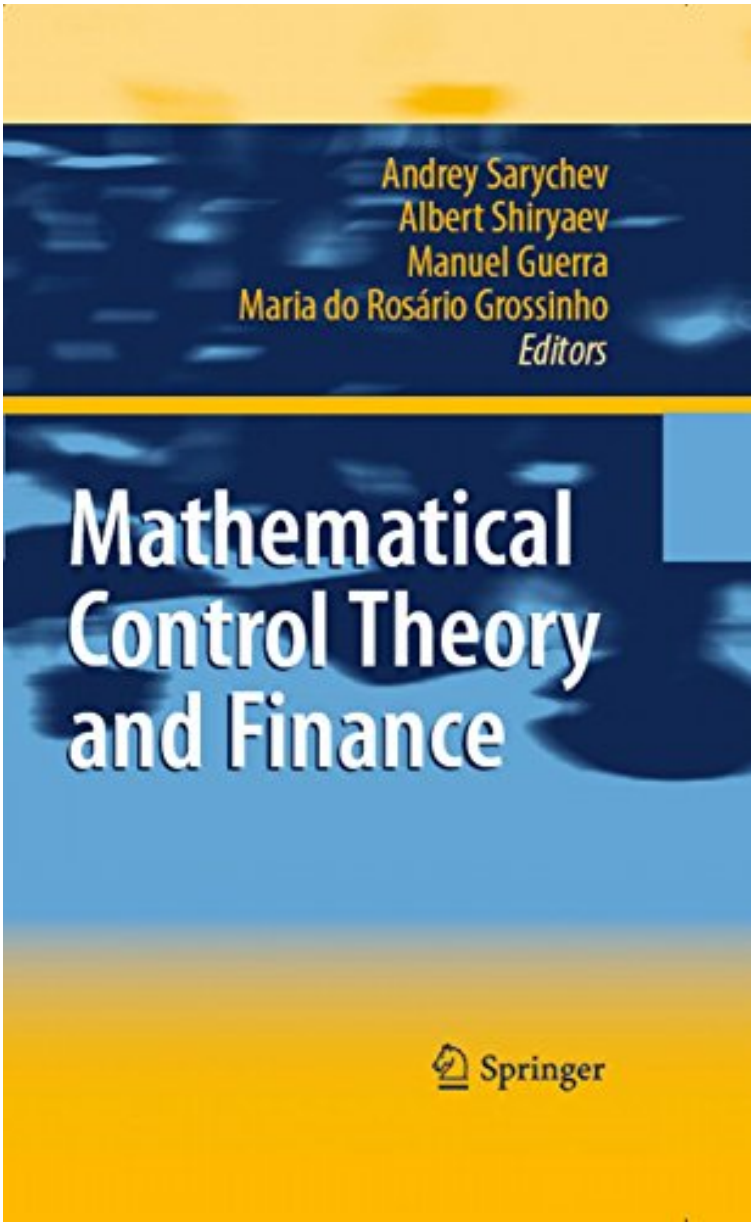

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From Springer : Mathematical Control Theory and Finance before purchasing it in order to gage whether or not it would be worth my time, and all praised Mathematical Control Theory and Finance:

Control theory provides a large set of theoretical and computational tools with applications in a wide range of ?elds,

running from rdquo;purerdquo; branches of mathematics, like geometry, to more applied areas where the objective is to ?nd solutions to rdquo;real liferdquo; problems, as is the case in robotics, control of industrial processes or ?nance. The rdquo;high techrdquo; character of modern business has increased the need for advanced methods. These rely heavily on mathematical techniques and seem indispensable for competitiveness of modern enterprises. It became essential for the ?nancial analyst to possess a high level of mathematical skills. C- versely, the complex challenges posed by the problems and models relevant to ?nance have, for a long time, been an important source of new research topics for mathematicians. The use of techniques from stochastic optimal control constitutes a well established and important branch of mathematical ?nance. Up to now, other branches of control theory have found comparatively less application in ?n- cial problems. To some extent, deterministic and stochastic control theories developed as di?erent branches of mathematics. However, there are many points of contact between them and in recent years the exchange of ideas between these ?elds has intensi?ed. Some concepts from stochastic calculus (e.g., rough paths) havedrawntheattentionofthedeterministiccontroltheorycommunity.Also, some ideas and tools usual in deterministic control (e.g., geometric, algebraic or functional-analytic methods) can be successfully applied to stochastic c- trol.

From the Back CoverThis book highlights recent developments in mathematical control theory and its applications to finance. It presents a collection of original contributions by distinguished scholars, addressingnbsp; a large spectrum of problems and techniques. Control theory provides a large set of theoretical and computational tools with applications in a wide range of fields, ranging from "pure" areas of mathematics up to applied sciences like finance. Stochastic optimal control is a well established and important tool of mathematical finance. Other branches of control theory have found comparatively less applications to financial problems, but the exchange of ideas and methods has intensified in recent years. This volume should contribute to establish bridges between these separate fields. The diversity of topics covered as well as the large array of techniques and ideas brought in to obtain the results make this volume a valuable resource for advanced students and researchers.