1. Record Nr. UNINA990001487660403321

Titolo	Astrotomography : Indirect Imaging Methods in Observational Astronomy / H.M.J. Boffin, D. Steeghs, J. Cuypers (Eds.)
Pubbl/distr/stampa	Berlin [etc.] : Springer, c2001
ISBN	3-540-42213-7
Descrizione fisica	XV, 434 p. : ill. ; 24 cm
Collana	Lecture notes in physics ; 573
Locazione	FI1
Collocazione	19-390
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia

2. Record Nr. UNINA9910485600303321

Autore	Mikami Toshio
Titolo	Stochastic Optimal Transportation : Stochastic Control with Fixed Marginals / / by Toshio Mikami
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2021
ISBN	981-16-1754-6
Edizione	[1st ed. 2021.]
Descrizione fisica	1 online resource (129 pages)
Collana	SpringerBriefs in Mathematics, , 2191-8201
Disciplina	519.2
Soggetti	Probabilities Geometry, Differential Differential equations Functional analysis Measure theory Probability Theory Differential Geometry Differential Equations Functional Analysis Measure and Integration
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Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Chapter 1. Introduction -- Chapter 2. Stochastic optimal transportation problem -- Chapter 3. Marginal problem.
Sommario/riassunto	In this book, the optimal transportation problem (OT) is described as a variational problem for absolutely continuous stochastic processes with fixed initial and terminal distributions. Also described is Schrödinger's problem, which is originally a variational problem for one-step random walks with fixed initial and terminal distributions. The stochastic optimal transportation problem (SOT) is then introduced as a generalization of the OT, i.e., as a variational problem for semimartingales with fixed initial and terminal distributions. An interpretation of the SOT is also stated as a generalization of Schrödinger's problem. After the brief introduction above, the fundamental results on the SOT are described: duality theorem, a sufficient condition for the problem to be finite, forward–backward stochastic differential equations (SDE) for the minimizer, and so on. The recent development of the superposition principle plays a crucial role in the SOT. A systematic method is introducedto consider two problems: one with fixed initial and terminal distributions and one with fixed marginal distributions for all times. By the zero-noise limit of the SOT, the probabilistic proofs to Monge's problem with a quadratic cost and the duality theorem for the OT are described. Also described are the Lipschitz continuity and the semiconcavity of Schrödinger's problem in marginal distributions and random variables with given marginals, respectively. As well, there is an explanation of the regularity result for the solution to Schrödinger's functional equation when the space of Borel probability measures is endowed with a strong or a weak topology, and it is shown that Schrödinger's problem can be considered a class of mean field games. The construction of stochastic processes with given marginals, called the marginal problem for stochastic processes, is discussed as an application of the SOT and the OT.