1. Record Nr. UNINA9910349321103321

Titolo	Quantum-Like Models for Information Retrieval and Decision-Making / / edited by Diederik Aerts, Andrei Khrennikov, Massimo Melucci, Bourama Toni
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019
ISBN	3-030-25913-7
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (178 pages)
Collana	STEAM-H: Science, Technology, Engineering, Agriculture, Mathematics & Health, , 2520-193X
Disciplina	025.524
Soggetti	Mathematical physics Mathematical Physics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	- D. Aerts, M. S. de Bianchi, S. Sozzo and T. Velóz: Modeling Meaning Associated with Documental Entities: Introducing the Brussels Quantum Approach -- A. Platonov, I. Bessmertny, E. Semenenko and A. Alodjants: Non-Separability Effects in Cognitive Semantic Retrieving -- J. Busemeyer and Z. Wang: Introduction to Hilbert Space Multi-Dimensional Modeling -- A. Khrennikov: Basics of Quantum Theory for Quantum-like Modeling Information Retrieval -- B. Wang, E. Di Buccio and M. Melucci: Representing Words in Vector Space and Beyond -- I. Schmitt, G. Wirsching and M. Wolff: Quantum-Based Modelling of Database States -- I. Schmitt: Incorporating Weights into a Quantum-Logic-Based Query Language -- E. Di Buccio and M. Melucci: Searching for Information with Meet and Join Operators.
Sommario/riassunto	Recent years have been characterized by tremendous advances in quantum information and communication, both theoretically and experimentally. In addition, mathematical methods of quantum information and quantum probability have begun spreading to other areas of research, beyond physics. One exciting new possibility involves applying these methods to information science and computer science (without direct relation to the problems of creation of quantum computers). The aim of this Special Volume is to encourage scientists,

especially the new generation (master and PhD students), working in computer science and related mathematical fields to explore novel possibilities based on the mathematical formalisms of quantum information and probability. The contributing authors, who hail from various countries, combine extensive quantum methods expertise with real-world experience in application of these methods to computer science. The problems considered chiefly concern quantum information-probability based modeling in the following areas: information foraging; interactive quantum information access; deep convolutional neural networks; decision making, quantum dynamics; open quantum systems; and theory of contextual probability. The book offers young scientists (students, PhD, postdocs) an essential introduction to applying the mathematical apparatus of quantum theory to computer science, information retrieval, and information processes. .