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   Nota di contenuto   Fundamentals -- Part I Schemes -- Robotic RMP Schemes and QP Formulations -- Proofs of Repetitive Motion Performance Index -- Part II QP Solvers -- Dual Neural Network -- Primal-Dual Neural Networks -- Numerical Algorithm 94LVI -- Numerical Algorithm E47 -- Part III Robot Simulations and Experiments -- Examples of Planar Multi-Link Manipulators -- PUMA560 Examples -- PA10 Examples -- Physical Robot Manipulator Experiments -- Part IV Appendices.

   Sommario/riassunto   Repetitive Motion Planning and Control of Redundant Robot Manipulators presents four typical motion planning schemes based on optimization techniques, including the fundamental RMP scheme and its extensions. These schemes are unified as quadratic programs (QPs), which are solved by neural networks or numerical algorithms. The RMP schemes are demonstrated effectively by the simulation results based on various robotic models; the experiments applying the fundamental RMP scheme to a physical robot manipulator are also presented. As the schemes and the corresponding solvers presented in the book have solved the non-repetitive motion problems existing in redundant robot manipulators, it is of particular use in applying theoretical research based on the quadratic program for redundant robot manipulators in

industrial situations. This book will be a valuable reference work for engineers, researchers, advanced undergraduate and graduate students in robotics fields. Yunong Zhang is a professor at The School of Information Science and Technology, Sun Yat-sen University, Guangzhou, China; Zhijun Zhang is a research fellow working at the same institute.   .