

1. Record Nr.	UNINA9910483374603321
Autore	Reiter Alexander
Titolo	Optimal path and trajectory planning for serial robots : inverse kinematics for redundant robots and fast solution of parametric problems // Alexander Reiter
Pubbl/distr/stampa	Wiesbaden : , : Springer Fachmedien Wiesbaden : , : Imprint : Springer Vieweg, , 2020
ISBN	3-658-28594-X
Edizione	[1st edition 2020.]
Descrizione fisica	1 online resource (xx, 191 pages) : illustrations (some color)
Disciplina	629.892
Soggetti	Robotics Robots - Kinematics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Kinematics of Serial Robots -- Optimal Path and Trajectory Planning -- Optimal Path Tracking.
Sommario/riassunto	Alexander Reiter describes optimal path and trajectory planning for serial robots in general, and rigorously treats the challenging application of path tracking for kinematically redundant manipulators therein in particular. This is facilitated by resolving both the path tracking task and the optimal inverse kinematics problem simultaneously. Furthermore, the author presents methods for fast computation of approximate optimal solutions to planning problems with changing parameters. With an optimal solution to a nominal problem, an iterative process based on parametric sensitivities is applied to rapidly obtain an approximate solution. Contents Kinematics of Serial Robots Optimal Path and Trajectory Planning Optimal Path Tracking Target Groups Scientists and master students in the fields of mechatronics, robotics and automation technology Practitioners in the same fields in industrial research and development About the Author Dr. Alexander Reiter is a senior scientist at the Institute of Robotics of the Johannes Kepler University (JKU) Linz, Austria. His major fields of research are kinematics, dynamics, and trajectory planning for kinematically redundant serial robots as well as real-time methods for solving parametric non-linear programming problems.

