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| Titolo                  | Dynamic Balancing of Mechanisms and Synthesizing of Parallel Robots /<br>/ edited by Dan Zhang, Bin Wei   |
| Pubbl/distr/stampa      | Cham : , : Springer International Publishing : , : Imprint : Springer, ,<br>2016  |
| ISBN                    | 3-319-17683-8   |
| Edizione                | [1st ed. 2016.]   |
| Descrizione fisica      | 1 online resource (532 p.)  |
| Disciplina              | 620   |
| Soggetti                | Control engineering<br>Robotics<br>Mechatronics<br>Vibration<br>Dynamical systems<br>Dynamics<br>Manufactures<br>Control, Robotics, Mechatronics<br>Vibration, Dynamical Systems, Control<br>Manufacturing, Machines, Tools, Processes  |
| Lingua di pubblicazione | Inglese   |
| Formato                 | Materiale a stampa  |
| Livello bibliografico   | Monografia  |
| Note generali           | Description based upon print version of record.   |
| Nota di bibliografia    | Includes bibliographical references.  |
| Nota di contenuto       | Review of Recent Advances on Reactionless Mechanisms and Parallel Robots.- Design of Reactionless Mechanisms without Counter-Rotations -- Design of Reactionless Linkages and Robots Equipped with Balancing Assur Groups.-- Design of Reactionless Planar Parallel Manipulators with Inertia Flywheel or With Base-Mounted Counter-Rotations -- Design of Reactionless Mechanisms with Counter-Rotary Counter-Masses -- Shaking Force and Shaking Moment Balancing of Six- and Eight-Bar Planar Mechanisms -- Synthesizing of Parallel Robots using Adjusting Kinematic Parameters Method.-Balancing of a 3 DOFs Parallel Manipulator.- Dynamic Balancing with Respect to a Given Trajectory.-Dynamic Balancing and Flexible Task Execution for Dynamic Bipedal Walking Machines.- Design of Reactionless Mechanisms Based on Constrained Optimization Procedure.- Optimization of Dynamically |

Balanced 4-Bar Linkages.- Balancing of Planar Mechanisms Having Imperfect Joints Using Neural Network-Genetic Algorithm (NN-GA) Approach.- Minimization of Shaking Force and Moment on a Four-Bar Mechanism Using Genetic Algorithm.- Optimal Balancing of the Robotic Manipulators -- Dynamics and Control of Planar, Translation and Spherical Parallel Manipulators.- Dynamic Modelling and Control of Balanced Parallel Mechanisms.-Controlled Biped Balanced Locomotion and Climbing.- Dynamic Balancing of Mobile Robots in Simulation and Real Environments -- Balancing Conditions of Planar and Spatial Mechanisms in the Algebraic Form.- Static Balancing of Articulated Wheeled Vehicles by Parallelogram- and Spring-based Compensation.

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Sommario/riassunto

This book covers the state-of-the-art technologies in dynamic balancing of mechanisms with minimum increase of mass and inertia. The synthesis of parallel robots based on the Decomposition and Integration concept is also covered in detail. The latest advances are described, including different balancing principles, design of reactionless mechanisms with minimum increase of mass and inertia, and synthesizing parallel robots. This is an ideal book for mechanical engineering students and researchers who are interested in the dynamic balancing of mechanisms and synthesizing of parallel robots. This book also:

- Broadens reader understanding of the synthesis of parallel robots based on the Decomposition and Integration concept
- Reinforces basic principles with detailed coverage of different balancing principles, including input torque balancing mechanisms
- Reviews exhaustively the key recent research into the design of reactionless mechanisms with minimum increase of mass and inertia, such as the design of reactionless mechanisms with auxiliary parallelograms, the design of reactionless mechanisms with flywheels, and the design of reactionless mechanisms by symmetrical structure design.

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