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Book review

Research Methods in Biomechanics

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Bibliographic Data: ISBN: 0-7360-9340-0 (ISBN13: 978-0-7360-9340-8); 2014 by Human Kinetics, Champaign, IL 61825-5076, USA, 440 pages, hardcover, $89.00.

Subjects: Research Techniques, Human Movement.

Description: *Research Methods in Biomechanics, 2nd Edition* demonstrates the range of available research techniques and assists both beginning and experienced researchers in developing methods for analyzing and quantifying human movement.

Purpose: The goal of the book is to expose up-to-date research methods and present new information detailing advanced analytical methods for investigating human movement.

Audience: The book is best for biomechanics professionals, researchers, motor behaviorists, and ergonomists.

Features: The book is composed of 4 parts and 14 chapters, 9 appendixes about mathematical and technical references and additional examples, glossary, references, and an index at the end of the book. The book contains 225 figures, 17 tables, and several examples. Part I is "Kinematics" including the following chapter headings; 1- "Planar kinematics", and 2- "Three-chapters; 3-"Body segment parameters", 4-"Forces and their measurement", 5-"Two-dimensional inverse dynamics", 6-dimensional kinematics". Part II is "Kinetics" consisting of the "Energy, work, and power", and 7-"Three-dimensional kinetics". Part III is "Muscles, Models, and Movement" encompassing the chapters; 8- "Electromyographic kinesiology", 9- "Muscle modeling", 10- "Computer simulation of human movement", and 11- "Musculoskeletal modeling". Finally, Part IV is "Further Analytical Procedures" and includes the following chapters; 12- "Signal processing", 13-"Dynamical systems analysis of coordination", and 14-"Analysis of biomechanical waveform data".

Assessment: The authors of the book are highly knowledgeable and respected researchers in the area of biomechanics. Each chapter of the book includes an overview, a summary, and a list of suggested readings for those interested in learning more. Some of the chapters include also examples questions. The book offers a comprehensive learning tool for understanding the flow of one concept to the next, how concepts build on each other, and how to combine analysis routines in different ways to accomplish different tasks.

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