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ISBN	3-030-52256-3
Edizione	[1st ed. 2021.]
Descrizione fisica	1 online resource (XIV, 305 p. 183 illus., 130 illus. in color.)
Disciplina	610.28
Soggetti	Biomedical engineering
	Biomechanics
	Physical therapy
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	The Experimental Method Experimental Tools Signal Contents Signal Processing Electromyography Motion Analysis Force Plates and Related Technologies Anthropometry Kinematics Inverse Dynamics and Energetics Error Analysis Scaling Appendix A: Matrices Appendix B: SI Units and Quantities Used In Biomechanics Appendix C: Binary Math Appendix D: Trigonometry Appendix E: Logarithms Appendix F: Numerical Data Differentiation Appendix G: Data Sets for Testing Data Differentiation Appendix H: Singular Value Decomposition Appendix I: Ellipses Appendix J: Calculus Appendix K: Inertial Properties of Geometric Solids Appendix L: Dot Product Appendix M: Cardan and Euler Angles Appendix N: Quaternions Appendix O: Cross Product.
Sommario/riassunto	This is the first textbook to comprehensively cover the experimental methods used in biomechanics. Designed for graduate students and researchers studying human biomechanics at the whole-body level, the book introduces readers to the theory behind the primary data collection methods and primary methods of data processing and analysis used in biomechanics. Each individual chapter covers a different aspect of data collection or data processing, presenting an

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overview of the topic at hand and explaining the math required for understanding the topic. A series of appendices provide the specific math that is required for understanding the chapter contents. Each chapter leads readers through the techniques used for data collection and processing, providing sufficient theoretical background to understand both the how and why of these techniques. Chapters end with a set of review questions, and then a bibliography which is divided into three sections (cited references, specific references, and useful references). Provides a comprehensive and in depth presentation on methods in whole-body human biomechanics; First textbook to cover both collection and processing in a single volume; Appendices provide the math needed for the main chapters.