World-renowned contributors tackle the latest technologies in an in-depth and readable manner. Because of rapid developments in computer technology and computational techniques, advances in a wide spectrum of technologies, coupled with cross-disciplinary pursuits between technology and its application to human body processes, the field of biomechanics continues to evolve. Many areas of significant progress include dynamics of musculoskeletal systems, mechanics of hard and soft tissues, mechanics of bone remodeling, mechanics of blood and air flow, flow-prosthesis interfaces, mechanics of impact, dynamics of man-machine interaction, and more. Thus, the great breadth and significance of the field in the international scene require a well integrated set of volumes to provide a complete coverage of the exciting subject of biomechanical systems technology.

Volume 1--computational methods--covers modeling soft biological tissues with the natural element method; the biomedical applications of computed tomography; and non-linear analysis of the respiratory pattern.