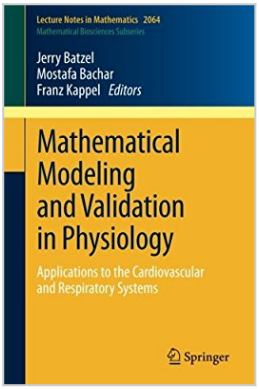

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This volume synthesizes theoretical and practical aspects of both the mathematical and life science viewpoints needed for modeling of the cardiovascular-respiratory system specifically and physiological systems generally. Theoretical points include model design, model complexity and validation in the light of available data, as well as control theory approaches to feedback delay and Kalman filter applications to parameter identification. State of the art approaches using parameter sensitivity are discussed for enhancing model identifiability through joint analysis of model structure and data. Practical examples illustrate model development at various levels of complexity based on given physiological information. The sensitivity-based approaches for examining model identifiability are illustrated by means of specific modeling examples. The themes presented address the current problem of patient-specific model adaptation in the clinical setting, where data is typically limited.

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Editorial Review

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