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Nota di contenuto Fixed Boundary PDE Model Formulation -- Fixed Boundary PDE Model Implementation -- Fixed Boundary PDE Model Output -- Moving Boundary PDE Model Implementation -- Moving Boundary PDE Model Output -- Index.

Sommario/riassunto The focus of this book is a detailed discussion of a dual cancer vaccine (CV)-immune checkpoint inhibitor (ICI) mathematical model formulated as a system of partial differential equations (PDEs) defining the spatiotemporal distribution of cells and biochemicals during tumor growth. A computer implementation of the model is discussed in detail for the quantitative evaluation of CV-ICI therapy. The coding (programming) consists of a series of routines in R, a quality, open-source scientific computing system that is readily available from the internet. The routines are based on the method of lines (MOL), a general PDE algorithm that can be executed on modest computers within the basic R system. The reader can download and use the

routines to confirm the model solutions reported in the book, then experiment with the model by varying the parameters and modifying/extending the equations, and even studying alternative models with the PDE methodology demonstrated by the CV-ICI model. Spatiotemporal Modeling of Cancer Immunotherapy: Partial Differential Equation Analysis in R facilitates the use of the model, and more generally, computer- based analysis of cancer immunotherapy mathematical models, as a step toward the development and quantitative evaluation of the immunotherapy approach to the treatment of cancer.