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experiment; 1.6. Linear analysis; 1.7. Nonlinear results  
2. Tumor Growth in Heterogeneous Tissueb2.1. Overview; 2.2. Governing equations; 2.3. Nonlinear results; 3. Tumor Growth and Neovascularizationc; 3.1. Overview; 3.2. The model; 3.3. Nonlinear results; 4. Conclusion and Future Research Directions; References;  
Progress in Modeling Pulsed Detonations Frank K. Lu and R. Bellini; 1. Introduction and Literature Review; 2. Overview of Early Studies in Detonations; 2.1. Structure of detonation waves; 3. Review of Numerical Simulation of Pulse Detonation Engines; 3.1. Detonation initiation; 3.2. Detonation stability; 3.3. Numerics and algorithms  
3.5. Turbulence modeling3.6. Chemical kinetics; 4. The Governing Equations; 5. Numerical Method; 5.1. Local ignition averaging method; 6. Numerical Simulations of Pulse Detonations; 6.1. One-dimensional detonation wave propagation; 6.2. Detonation wave propagation through an area enlargement; 7. Outlook and Conclusions; Acknowledgments; References; Direct Numerical Simulations of Multiphase Flows Gr etar Tryggvason and Jiakai Lu; 1. Introduction; 2. Governing Equations; 3. Numerical Method; 4. Results; 5. Conclusions; Acknowledgments; References

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Sommario/riassunto

This volume showcases lecture notes collected from tutorials presented at the Workshop on Moving Interface Problems and Applications in Fluid Dynamics that was held between January 8 and March 31, 2007 at the Institute for Mathematical Sciences, National University of Singapore. As part of the program, these tutorials were conducted by specialists within their respective areas such as Robert Dillon, Zhilin Li, John Lowengrub, Frank Lu and Gretar Tryggvason. The topics in the program encompass modeling and simulations of biological flow coupled to deformable tissue/elastic structure, shock wave

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