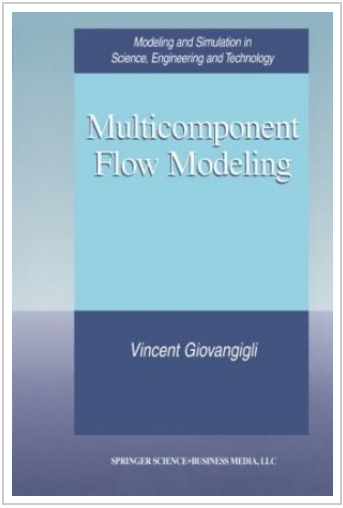

Multicomponent Flow Modeling

By Vincent Giovangigli

Birkhauser. Paperback. Condition: New. 321 pages. Dimensions: 9.2in. x 6.1in. x 0.8in.The goal of this is book to give a detailed presentation of multicomponent flow models and to investigate the mathematical structure and properties of the resulting system of partial differential equations. These developments are also illustrated by simulating numerically a typical laminar flame. Our aim in the chapters is to treat the general situation of multicomponent flows, taking into account complex chemistry and detailed transport phe nomena. In this book, we have adopted an interdisciplinary approach that en compasses a physical, mathematical, and numerical point of view. In par ticular, the links between molecular models, macroscopic models, mathe matical structure, and mathematical properties are emphasized. We also often mention flame models since combustion is an excellent prototype of multicomponent flow. This book still does not pretend to be a complete survey of existing models and related mathematical results. In particular, many subjects like multi phase-flows , turbulence modeling, specific applications, porous me dia, biological models, or magneto-hydrodynamics are not covered. We rather emphasize the fundamental modeling of multicomponent gaseous flows and the qualitative properties of the resulting systems of partial dif ferential equations. Part of this book was taught...

Reviews

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