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Autore	Saramito Pierre
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Sommario/riassunto	This book presents a comprehensive overview of the modeling of complex fluids, including many common substances, such as toothpaste, hair gel, mayonnaise, liquid foam, cement and blood, which cannot be described by Navier-Stokes equations. It also offers an up-to-date mathematical and numerical analysis of the corresponding equations, as well as several practical numerical algorithms and software solutions for the approximation of the solutions. It discusses industrial (molten plastics, forming process), geophysical (mud flows, volcanic lava, glaciers and snow avalanches), and biological (blood flows, tissues) modeling applications. This book is a valuable resource for undergraduate students and researchers in applied mathematics, mechanical engineering and physics.