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Nota di contenuto	Introduction -- Shock Polar Analysis -- Perturbation of Regular Shock Reflection -- Stability of Mach Configuration -- Shock Reflection in Unsteady Flow -- Further Considerations and Open Problems -- Appendix.
Sommario/riassunto	This book is aimed to make careful analysis to various mathematical problems derived from shock reflection by using the theory of partial differential equations. The occurrence, propagation and reflection of shock waves are important phenomena in fluid dynamics. Comparing the plenty of studies of physical experiments and numerical simulations on this subject, this book makes main efforts to develop the related theory of mathematical analysis, which is rather incomplete so far. The book first introduces some basic knowledge on the system of compressible ow and shock waves, then presents the concept of shock polar and its properties, particularly the properties of the shock polar for potential ow equation, which are rst systematically presented and proved in this book. Mathematical analysis of regular reection and Mach reflection in steady and unsteady ow are the most essential parts of this book. To give challenges in future research, some long-standing open problems are listed in the end. This book is attractive to researchers in the fields of partial differential equations, system of conservation laws, fluid dynamics, and shock theory. .