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Nota di contenuto	Preface -- Chapter 1. Edge plasma issues in magnetic fusion devices -- Chapter 2. Atomic Physics Relevant to Fusion Plasmas -- Chapter 3. Plasma-material interactions in magnetic fusion devices -- Chapter 4. Sheath physics -- Chapter 5. Dust in fusion plasmas -- Chapter 6. Fluid description of edge plasma transport -- Chapter 7. Anomalous cross-field transport in edge plasma -- Chapter 8. Computational modeling of the edge plasma transport phenomena -- Chapter 9. Physics of some edge plasma phenomena -- Chapter 10. Conclusions and outlook.
Sommario/riassunto	This book reviews the current state of understanding concerning edge plasma, which bridges hot fusion plasma, with a temperature of roughly one million degrees Kelvin with plasma-facing materials, which have melting points of only a few thousand degrees Kelvin. In a fact, edge plasma is one of the keys to solution for harnessing fusion energy in magnetic fusion devices. The physics governing the processes at work in the edge plasma involves classical and anomalous transport of multispecies plasma, neutral gas dynamics, atomic physics effects, radiation transport, plasma-material interactions, and even the transport of plasma species within the plasma-facing materials. The book starts with simple physical models, then moves on to rigorous

theoretical considerations and state-of-the-art simulation tools that are capable of capturing the most important features of the edge plasma phenomena. The authors compare the conclusions arising from the theoretical and computational analysis with the available experimental data. They also discuss the remaining gaps in their models and make projections for phenomena related to edge plasma in magnetic fusion reactors.

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