

## CONTENTS

Foreword	v
<b>I. Vlasov-Poisson in Plasma Physics</b>	
The Child-Langmuir Law in the Kinetic Theory of Charged-Particles.	
Part 1, Electron Flows in Vacuum	
<b>P. Degond</b>	3
Eulerian Codes for the Vlasov Equation	
<b>M. R. Feix, P. Bertrand and A. Ghirto</b>	45
Mathematical Models of Ion Extraction and Plasma Sheaths	
<b>S. Mas-Gallid and P. A. Raviart</b>	82
<b>II. Quantum Mechanics and Semiconductors</b>	
Transport Equations for Quantum Plasmas	
<b>G. Manfredi and M. R. Feix</b>	109
Mathematical Theory of Kinetic Equations for Transport	
Modelling in Semiconductors	
<b>F. Poupaud</b>	141
<b>III. Boltzmann Equations and Gas Dynamics</b>	
On Zero Pressure Gas Dynamics	
<b>F. Bouchut</b>	171
A Remark Concerning the Chapman-Enskog Asymptotics	
<b>L. Desvillettes and F. Golse</b>	191
Introduction to the Theory of Random Particle Methods	
for Boltzmann Equation	
<b>B. Perthame</b>	204