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Part II Foundations of Quantum Physics and Precision Measurements

Sommario/riassunto

This Open Access book gives a comprehensive account of both the history and current achievements of molecular beam research. In 1919, Otto Stern launched the revolutionary molecular beam technique. This technique made it possible to send atoms and molecules with well-defined momentum through vacuum and to measure with high accuracy the deflections they underwent when acted upon by transversal forces. These measurements revealed unforeseen quantum properties of nuclei, atoms, and molecules that became the basis for our current understanding of quantum matter. This volume shows that many key areas of modern physics and chemistry owe their beginnings to the seminal molecular beam work of Otto Stern and his school. Written by internationally recognized experts, the contributions in this volume will help experienced researchers and incoming graduate students alike to keep abreast of current developments in molecular beam research as well as to appreciate the history and evolution of this powerful method and the knowledge it reveals.