

Ultra-Cold Neutrons is the complete, self-contained introduction and review of the field of *ultra-cold neutron (UCN)* physics. It is suitable as an introduction to the field for research students, as a useful compendium of results and techniques for researchers and is of general interest to non-specialists in other areas of physics such as neutron, atomic and fundamental physics and neutron scattering.

Developments in *UCN* technology over the last two decades have been such that *UCN* can now be stored in material and magnetic bottles for time periods limited only by the beta decay rate of the free neutron. This capability has opened up the possibility of a wide range of applications in the fields of both fundamental and condensed state physics. Some of these applications, such as the search for the electric dipole moment of the neutron which constitutes the most sensitive test of time reversal invariance yet devised, have reached a comparatively well-advanced stage while others are taking their first tentative steps.

Ultra-Cold Neutrons covers the theoretical and experimental aspects of *UCN* scattering, production, storage and transportation. In addition an historical view of the development of the field is given and the wide range of applications of *UCN* is described in considerable depth. *Ultra-Cold Neutrons* provides readers with the definitive insight into the exciting world of *UCN* research.

The Authors

Dr Robert Golub, Research Scientist at the Hahn Meitner Institute in Berlin, is one of the leading authorities in the emerging field of *Ultra-Cold Neutrons*. formerly with the University of Sussex, the Max Plank Institute and the Technical University of Berlin he has a wealth of expertise in this subject.

Dr D J Richardson is currently a Research Fellow at the Optoelectronics Research Centre at Southampton University working on ultrashort pulse generation and optical switching. He has worked extensively in the field of *UCN* physics both at the Institute Laue Langevin at Grenoble and at the University of Sussex, developing many new experimental and theoretical techniques.

Dr S K Lamoreaux, Research Assistant Professor at the Physics Department of the University of Washington, was awarded the Henderson Prize for work carried out on experimental atomic physics, has made major contributions to the use of *UCN* in fundamental physics and continues to play a leading role in this and related areas.



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Bristol, Philadelphia and New York

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ISBN 0-7503-0115-5



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