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Superconducting Quantum Interference Devices and their Applications

Proceedings of the Third International Conference
on Superconducting Quantum Devices
Berlin (West), June 25-28, 1985

Editors

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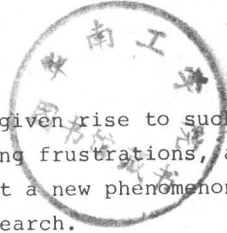
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PREFACE

Rarely has a new physical phenomenon given rise to such strong expectations, and resulted in such strong frustrations, as has the Josephson effect. It is also rare that a new phenomenon has had such a wide influence on physical research.



Nobody, of course, can predict future developments, but nearly all the participants in this conference felt at the end that the active history of the Josephson effect and of SQUID technology has by no means reached its final state.

From the beginning it has been the goal of IC SQUID to observe, and make available a critical analysis of the current situation of SQUID physics and technology. This 3rd edition of the IC SQUID proceedings reflects the research done over the last 5 years. Reading the 20 invited review lectures, the 16 invited supplementary lectures and the 89 contributed papers, it is clear that there will have to be future volumes. Biomagnetic and HF applications in combination with new materials and improved fabrication techniques, together with new concepts of barrier physics - quantum fluctuations in macroscopic superconducting systems and the quantum interference in normal metal loops - will make necessary a continuing analysis in the future. Special progress may be expected from the future development of ultras-small systems, three-terminal non-equilibrium devices, and fluxon dynamics in long Josephson junctions. Nevertheless, the constraints in this field have become much more difficult and tedious, which also makes the editors' task more difficult.

Being obliged to publish these results as quickly as possible, it was unavoidable that we had to make certain cuts. These concern mainly a comprehensive and detailed classification system. We have therefore been forced to make decisions which might be considered rather arbitrary in certain cases.

Our thanks go to all the authors who have enabled us to produce this volume

The conference was proposed and encouraged by the European Physical Society.

The publication of the proceedings is an appropriate occasion to acknowledge once again the generous support of the conference by the President of the Deutscher Bundestag, the Berlin Senate, the President of the Physikalisch-Technische Bundesanstalt, Siemens AG, Vacuumschmelze GmbH, S.H.E. GmbH, and the Deutsche Physikalische Gesellschaft.

It should also be emphasized that without the cheerful and active participation of the members of the Berlin Institute of the Physikalisch-Technische Bundesanstalt in all aspects of the conference, the meeting would not have been possible. Our thanks go to G. Sauerbrey, head of the Berlin Institute, and to all its members.

We are also greatly indebted to the loyalty and patient secretarial assistance of Frau A. Lochmann and Frau G. Wille. We are much obliged to Frau R. Föhn for the organization of this volume, as well as for performing the task of reader with great care.

We are grateful to the de Gruyter Publishing Company for its valuable cooperation in preparing these proceedings.

Berlin, August 1985

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