

PREFACE

In studying the nine invited lectures and the 64 contributed papers collected in this volume, it becomes clear that the IC SQUID 80 conference was necessary to draw together the last four years of research and development work in this field. This underlines what we pointed out in the preface of the proceedings of IC SQUID 76 ¹⁾, that "theory and applications in several branches are just at the beginning". The present state, as demonstrated here, shows that this statement still holds true. Impressive examples are the appearance at IC SQUID of novel devices (e.g. long Josephson junctions) and potentially new basic physical processes (e.g. macroscopic quantum tunneling). Nevertheless, the contents of this volume represent significant advance in the field of Superconducting Quantum Interference Devices and their applications.

A specific feature of IC SQUID 80 was the strong connection with the 3rd Workshop on Biomagnetism which was organized simultaneously. For this reason, lectures and papers on SQUID application in Biomagnetism have been excluded here and will be published in a separate volume ²⁾.

In preparing the present volume, a few restrictions proved to be unavoidable. It was impossible to enforce an uniform unit system (in particular the SIS) for the different contributions. Consequently, a comparison of the different results is at times unnecessarily complicated. Furthermore, a comprehensive classification scheme for this field, which could be used as the subject index, has not yet been fully developed. Therefore, we have been forced to make decisions which might be considered in some cases to be rather arbitrary.

The large extent of this volume together with the proceedings of the 3rd Workshop on Biomagnetism reflects the size of both conferences. The delegates, representing 21 countries, included 197 participants.

Our thanks go to all of them, and to the authors who have enabled us to produce these volumes.

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

VI

The publication of the proceedings is a fine occasion to acknowledge once more the generous support of the conference by the President of the Deutscher Bundestag, the Berlin Senate, the President of the Physikalisch-Technische Bundesanstalt, and the Siemens AG.

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

We are also greatly indebted to the loyalty and patient secretarial assistance of Frau M. Bieber and Frau A. Lochmann in connection with the organization of this volume.

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

Berlin, September 1980

H.-D. Hahlbohm

H. Lübbig

- 1) Superconducting Quantum Interference Devices and their Applications, W. de Gruyter, Berlin 1977.
- 2) Biomagnetism, W. de Gruyter Berlin, in press.