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A BIBLIOGRAPHY OF PUBLICATIONS IN THE NBS ELECTROMAGNETIC FIELDS DIVISION

Edited by: Charles K. S. Miller

Electromagnetic Fields Division
Center for Electronics and Electrical Engineering
National Engineering Laboratory
National Bureau of Standards
Boulder, Colorado 80303

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U.S. DEPARTMENT OF COMMERCE, Philip M. Klutznick, Secretary

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A BIBLIOGRAPHY OF PUBLICATIONS IN THE NBS ELECTROMAGNETIC FIELDS DIVISION

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Charles K. S. Miller

This bibliography lists the publications of the personnel of the NBS Electromagnetic Fields Division of NBS in the period from January 1970 through December 1979. A few earlier references that are directly related to the present work of the division are included.

Key words: Antennas; electromagnetic interference; em material properties; electromagnetic metrology; microwaves; noise; non-ionizing radiation; radiation hazards;.

INTRODUCTION

The Electromagnetic Fields Division was formed during the reorganization of NBS in April 1978. The Division develops measurement methods and standards, and provides metrological support for: antenna systems, noise measurement equipment, electromagnetic interference and radiation hazards equipment, systems for measuring electromagnetic properties of materials, and radiated electromagnetic fields and waves. For the individual staff members of the Division, the reorganization brought a realignment of long term goals but little immediate discontinuity in their work. It makes good sense therefore that this bibliography begin some time before the reorganization, so as to include the more recent origins of the present work of the Division. The editor has attempted to include all work published by the staff members of the Division, while they were employees of NBS, in the period from January 1970 through December 1979. There are a few exceptions. Work that is totally unrelated to the present program has been excluded. Relevant work performed by authors prior to joining this Division or work by authors now in other parts of NBS has been included because of its special significance. A miscellaneous category includes general publications. A few papers published before 1970 have also been included because of their direct relationship to the present program.

There are several other information sources that may be useful to the reader who is interested in activities at NBS connected with electromagnetic metrology. A companion bibliography: Metrology for Electromagnetic Technology, NBSIR 79-1625 (January 1980), lists the publications of the Electromagnetic Technology Division. Its topics include metrology for: antennas, satellite communications equipment, electromagnetic interference, and hazards, and remote sensing. Three bibliographies of the publications of the former Electromagnetic Division have been published: NBSIR-73-320 (July 1972-June 1973); NBSIR-74-395 (July 1973 - June 1974); NBSIR-75-818 (July 1974 - June 1975). These were preceded by a series of unpublished reports (edited by H. M. Altschuler) that cover the period back to 1956. An excellent summary of the whole field of electromagnetic metrology as it stood in 1967 was published as a special issue of the IEEE Proceedings (volume 55, June 1967). Advances in the following decade were described in another special issue of the same journal (volume 66, April 1978).

A NOTE ON ABBREVIATIONS

Most readers will be familiar with the commonly used abbreviations for the names of the various professional journals that appear in this bibliography. There are also several publication series that are peculiar to NBS and call for explanation. They are:

| | | |
|----------|-----|--|
| NBSIR - | NBS | Interagency/Internal Report |
| NBS-TN - | NBS | Technical Note |
| NBS-SP - | NBS | Special Publication |
| NBS-MN - | NBS | Monograph |
| LESP-RPT | | Law Enforcement Standards Program Report |
| OTR - | | Office of Telecommunications Report |

Purchase Procedures and Document Availability

NBS Technical Notes and Special Publications may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Orders must be accompanied by postal money order, express money order, or check made out to the Superintendent of Documents.

NBS Interagency/Internal Reports (NBSIR's) may be purchased from the National Technical Information Service, Springfield VA 22161. Order must be accompanied by postal money order, express money order, or check made out to the NTIS.

Reprints of papers published in non-NBS media may be available in limited quantities from the authors.

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A large part of the labor of preparing a bibliography is spent on collecting and arranging the material. I thank Frances Brown, Kathryn A. Gibson, Susie Ann Rivera, and Susan Lee Rothschild for their assistance with these chores. The prime source of material was the NTIS file, with access through the Lockheed Dialog System. This was supplemented with material supplied by the individual authors.

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