Ultra-Wideband, Short-Pulse Electromagnetics 5
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Preface

The fifth Conference on Ultra-Wideband Short-Pulse Electromagnetics was held in Scotland from 30 May to 2 June 2000 at the Edinburgh International Conference Centre. It formed part of the EUROEM 2000 International Conference under the chairmanship of David Parkes (DERA, Malvern) and Paul Smith (University of Dundee). It continued the series of international conferences that were held first at the Polytechnic University, Brooklyn, New York in 1992 and 1994, then in Albuquerque, New Mexico in 1996 (as part of AMEREM ’96) and more recently in Tel-Aviv, Israel in 1998 (as part of EUROEM ’98).

The purpose of these meetings is to focus on advanced technologies for the generation, radiation and detection of ultra-wideband short pulse signals, taking into account their propagation, scattering from and coupling to targets of interest; to report on developments in supporting mathematical and numerical methods; and to describe current and potential future applications of the technology.

Since 1996 these meetings have been incorporated into the AMEREM/EUROEM biennial Conference that also includes the High Power Electromagnetics Conference and the Unexploded Ordnance Detection and Range Remediation Conference. This decision taken by the Permanent HPEM Committee in 1996 is a recognition of the interests in technology and methods of these Conferences that are common with those of the Ultra-Wideband Short-Pulse Electromagnetics Conference. It also recognises the benefit in providing an international forum for scientists and engineers in such closely related disciplines. The next meeting will be held as part of AMEREM ’02 in June 2002 at the US Naval Academy in Annapolis, Maryland under the chairmanship of Terence Wieting.

The papers in this volume report on newly emerging ideas and develop recurrent themes of earlier meetings. The topics include electromagnetic theory and scattering theory (including papers presented at a special session on fundamental solutions of Maxwell’s equations); ultra-wideband radar systems; ultra-wideband and transient antennas; pulsed power generation and propagation; ultra-wideband polarimetry; ultra-wideband and transient metrology; detection and identification studies; RF interactions and chaotic effects; and biological effects.

The Chairmen and Editors wish to thank all of those involved in EUROEM 2000 for their assistance and participation, especially members of the National and International Committees and their supporting institutions. We also acknowledge with gratitude the sponsorship of the Summa Foundation and the Permanent HPEM Committee, the European Office of Aerospace Research and Development (Air Force Office of Scientific Research, United States Air Force Research Laboratory), the Defense and Evaluation Research Agency (Malvern), Los Alamos National Laboratory, Lothian and Edinburgh Enterprise Limited and the Edinburgh Convention Bureau, the European Commission, and Dundee University. We acknowledge the technical co-sponsorship of the Institution of Electrical and Electronic Engineers (IEEE), the International Union of Radio Science (URSI), the Institution of Electrical Engineers (IEE), and the Applied Computational Electromagnetics Society (ACES).

Paul D. Smith
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