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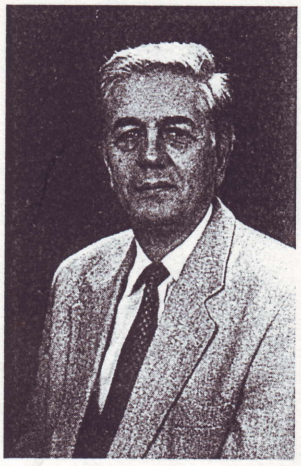
Preface

The series of international symposia on Engineering Turbulence Modelling and Measurements has been held every three years in or near attractive Southern-European cities beginning with Dubrovnik in 1990. The under-lying driver of these conferences has been engineering-related flow problems. Such flows are nearly always turbulent and their successful resolution usually entails a blend of turbulence modelling and refined experiments.

The fourth symposium, held in Ajaccio, Corsica in May 1999 had attracted 220 paper proposals, from which, following extensive review, 86 were included in the conference proceedings (W. Rodi, D. Laurence (Eds.), Engineering Turbulence Modelling and Experiments 4, Elsevier, Amsterdam, 1999). From these, nineteen of the best have been included in this special ETMM issue of the International Journal of Heat and Fluid Flow. Nearly all authors have accepted our suggestion of including new material whether to update or to provide additional perspectives on the version presented orally at the Conference itself. All the papers have thereafter undergone a further review to the IJHFF's normal standards.

The Conference organizers had invited two presentations, one from academia and one from industry, on the computation of flows arising in external aerodynamics. These two papers lead-off this issue. As is commonly the case, identifying two invited speakers in a particular area, stimulated many other high quality contributions on related topics. Thus, in our selection a half-dozen articles on aerodynamics-related themes appear next. However, like the Conference itself, this special issue covers much more besides: high-quality flow measurements; a range of modelling approached from a non-linear eddy viscosity scheme to LES, collectively applied to an impressive diversity of flow problems; two papers involving acoustics (a new direction of evolution for the IJHFF); and three contributions on two-phase flows. We hope this selection provides a reliable marker of where Engineering Turbulence Modelling and Measurements have reached at the start of this millennium.



Finally, on a personal note, we should like to dedicate this special issue to Professor Kemal Hanjalić, Chair of Heat Transfer at Delft University of Technology, in celebration of his recent 60th birthday. Professor Hanjalić obtained his doctorate in 1970 from Imperial College, London for computational and experimental research on turbulent flow through partially roughened channels. On graduation he returned to his faculty position in the Department of Mechanical Engineering at the University of Sarajevo, being promoted to Professor of Fluid Mechanics and Turbomachinery in 1979. During a twelve year tenure of this Chair he also served as Head of Department (1975–78) and Dean of the Faculty (1984–85). Throughout his period at the University of Sarajevo extending over more than twenty years, he worked tirelessly to develop his department's research, its infrastructure and its relations with industry. In 1991 he took what had been intended to be a year's leave at the University of Erlangen-Nüremberg, Germany as Guest Professor. The civil war that erupted in Bosnia-Hercegovina in his absence meant, however, that, professionally, the move from Yugoslavia was permanent. After a second year at Erlangen and a year at Michigan Technological University he was appointed to his present position at TU Delft a little over five years ago.

From the time of his doctoral research Kemo has been fascinated by the mysteries and challenges of turbulent flow. Over the years, he has produced numerous pioneering papers in this field and, since his arrival in Delft, a particularly rich vein of technical publications has come from him and his group. The example included in this issue on the effects of Lorentz forces on turbulent flow is typical. Besides leading one of the strongest teams in turbulence modelling, many readers will know of his work as organizer of the complementary conference series Turbulence, Heat & Mass Transfer whose third symposium was held in Nagoya, Japan in April this year. He currently chairs the ERCOFTAC special interest group in Turbulence Modelling while also serving as a member of IJHFF's Editorial Advisory Board. At 60, he is simply fizzing with new ideas and plans for fresh research initiatives which we look forward to seeing him put into practice over the next decade.

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