

Preface

This Special Volume consists of selected papers from the Conference on Bluff Body Wakes and Vortex-Induced Vibrations, held at Santorini Island, Greece, during the period 21–24 June 2005. The present Conference on Bluff Body Wakes and Vortex-Induced Vibrations (BBVIV-4) was the fourth in the series, following on from the Forum on Advances in the Understanding of Bluff Body Wakes and Vortex-Induced Vibrations (BBVIV-1), which was part of the 1998 ASME-FED Summer Meeting in Washington, DC, USA; the IUTAM Symposium on Bluff Body Wakes and Vortex-Induced Vibrations (BBVIV-2) held in Marseille in June 2000; and the Conference on Bluff Body Wakes and Vortex-Induced Vibrations (BBVIV-3) held in Port Douglas, Queensland, Australia in December 2002. This series of Conferences is designed to provide a stimulating and constructive forum for researchers specializing in the areas of flows around bluff bodies that are either fixed or undergoing vortex-induced vibrations (VIV). The formal sessions consisted of single sessions including invited talks with ample time outside the formal sessions for participants to meet in a convivial atmosphere.

The papers in this volume were selected by the Scientific Committee from amongst the oral presentations at the Conference and have all been peer-reviewed. The conference attracted 74 participants from 18 countries, including many of the most active researchers in the field. The meeting took place over 4 days and consisted of single plenary sessions with 8 keynote speakers, 39 oral presentations, and 24 poster presentations. A total of 81 abstracts were received and reviewed by the Scientific Committee and the Chairmen. It is believed that the high level of the standard of the presentations and the science set at the previous three conferences was maintained.

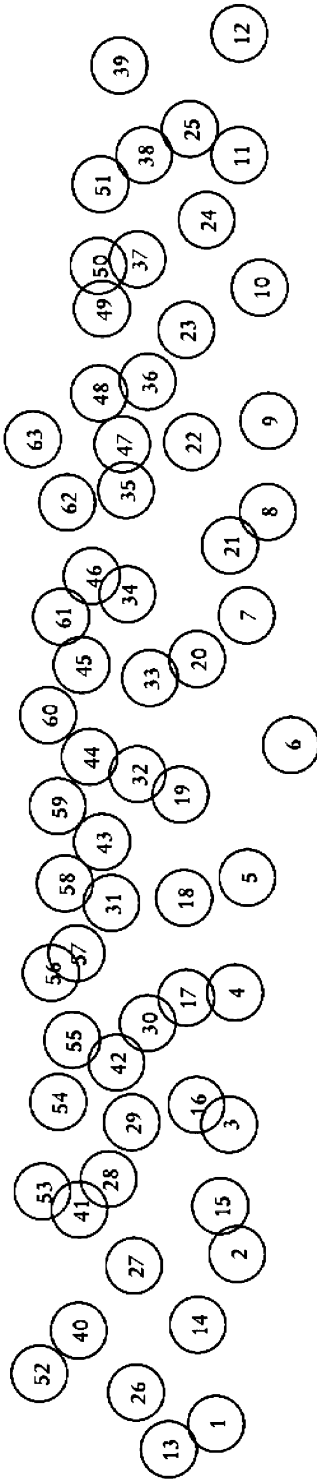
A full set of papers, of both oral and poster presentations, was provided to each participant at the conference site—a detailed list is provided below. The sessions at the Conference were grouped under the following titles:

- Vortex-induced vibration (20 talks of 20 min, 9 poster presentations)
- Cylinder wakes (8 talks, 2 posters)
- Bluff body wakes (6 talks, 3 posters)
- Wake control, manipulation and interference (3 talks, 8 posters)
- Vehicle aerodynamics (2 talks, 2 posters)

Regarding the vortex-induced vibrations sessions, the topics of research covered not only the elastically mounted circular cylinder, but also tethered or freely rising and falling cylinders. Several talks were concerned with flexible cylinders, such as risers, straked bodies, effects of blockage, two-degree-of-freedom cases, and also the flutter instability of filaments and flags. Approaches to the above problems were not only experimental, but further strides were taken towards simulation or modelling of these flows, at ever-higher Reynolds numbers, and some theoretical analyses were undertaken. All the approaches yielded new understandings of the wakes and fluid–structure interactions. Bluff body wakes comprised circular cylinders, spheres, square cylinders, rectangular cylinders and a new area was studied by the Monash-Marseille group of impacting or impulsively arrested bodies. Several papers were presented on interference between bluff bodies and their wakes, as well as on the problem of the rotating cylinder, and methods of drag reduction. A set of papers was contributed on the problem of vehicle flows, in particular the flow around the Ahmed body. From the meeting, it was clear that the topic of bluff body wakes and vortex-induced vibration is motivated by many industrial applications and natural examples. The analytical, experimental and computational approaches to these wakes and VIV problems have moved forward significantly since the last conference BBVIV3 in Port Douglas, Australia, but it is quite evident that a great deal remains to be done to understand these varied flows and phenomena, and we all left the conference venue re-invigorated and excited to push forward our research programs scientifically.

Our invited speakers delivered particularly accomplished presentations, and we were indeed fortunate to have Michael Paidoussis present the Opening Lecture at the conference, and present a talk for the first time in his native country, Greece, in the year of his 70th birthday! This is especially pleasing as he has been the Chief Editor of the





- 1 - Thomas LEWEKE 2 - Peter BEARMAN 3 - Charles WILLIAMSON 4 - James DECORPO 5 - Chuck CALVANO
 6 - Marianna BRAZA 7 - Michael TRIANTAFYLLOU 8 - Celso PESCE 9 - Charles DALTON 10 - Laszlo BARANYI
 11 - Gregory SHEARD 12 - Justin LEONTINI 13 - Iakov AFANASSIEV 14 - Julio MENEHINI 15 - Serpil KOCABIYIK
 16 - Hassan NAGIB 17 - Christoph BRUECKER 18 - Richard JAMES 19 - Gunnar FURNES 20 - Michael PAIDOUSSIS
 21 - Sophie GOUJON-DURAND 22 - Michel PROVANSAL 23 - David SUMNER 24 - Bronwyn STEWART 25 - Patrick
 BROWNE 26 - Lambros KAIKTSIS 27 - Didier LUCOR 28 - Emmanuel de LANGRE 29 - Tetsuhiro TSUKIJI
 30 - Fernando PONTA 31 - Enrique CASAPRIMA 32 - Celso MOROOKA 33 - Jose WESFREID 34 - Erik WASSEN
 35 - Joseph KLAMO 36 - Timothy MORSE 37 - Andre LANEVILLE 38 - Gunnstein SAELEVIK 39 - Atle JENSEN
 40 - Christophe ELOY 41 - Hassan AREF 42 - Suchan DONG 43 - Thomas GOOSSENS 44 - Jean-Francois BEAUDOIN
 45 - Christoffer NORBERG 46 - Patrice MEUNIER 47 - Raghu GOVARDHAN 48 - Mathieu ROUMEAS 49 - Emmanuel
 GUILMINEAU 50 - Matthew HOROWITZ 51 - Mitsushi OKADA 52 - Kerry HOURIGAN 53 - Francisco HUERA
 HUARTE 54 - Masa BRANKOVIC 55 - Peter MONKEWITZ 56 - Richard WILLEN 57 - Peter HAGEDORN
 58 - Cheng-Hsiung KUO 59 - Jerry Min CHEN 60 - John ELSTON 61 - An-Bang WANG 62 - Sanjay MITTAL
 63 - Ming-Huei YU

present *Journal of Fluids and Structures* since its inception, and his paper suitably opens the contributions published here in this Special Issue. We were delighted to have other well-known researchers present Invited Lectures, namely, André Laneville (Sherbrooke University, Canada), Michael Triantafyllou (MIT, USA); Mark Thompson (Monash University, Australia); Hassan Nagib (IIT, USA); Marianna Braza (IMFT Toulouse, France); Emmanuel de Langre (Ecole Polytechnique, France); Peter Monkewitz (EPFL, Lausanne, Switzerland). One may note also the co-authors of these speakers at the head of the published papers in this volume (See List of Presentations).

This series of conferences has been strongly stimulated by the support of the Ocean Engineering Division of the US Office of Naval Research, monitored by Dr Tom Swean, for research in this area and for the provision of funds for the conference and the proceedings, in conjunction with Chuck Calvano and James DeCorpo of the US Office of Naval Research Global.

The Conference was held at a resort hotel complex in the centre of Santorini Island, in the heart of the beautiful Greek Islands. The venue was a phenomenally beautiful one, with the sheer rock face of the caldera, the inside of the volcano, dropping away almost vertically. A lovely dinner was held in a restaurant on the sides of this caldera, in the town of Fira, and was appreciated greatly by all the participants, and our wonderful Local Team Heliotopos. Strong warm winds blew across the island, towards the latter part of the conference, but although the beaches were inviting, there was no provision for sailing on the island—a point that has already been addressed in the choice of venue for BBVIV5, to enable important fluid–structure activities during the free afternoon. We were proud to announce the venue of the next conference in the series to be the coast of Brazil, Costa di Sauipe, and to heartily welcome Julio Meneghini as a Co-Chairman. Having iChatted with Julio earlier today (CHKW), I can vouch for the fact that this will be an absolutely splendid venue, and we look forward to seeing you all there! All participants came away from the meeting in Santorini Island with both the intellect and the senses stimulated, and with new insights into wakes and VIV.

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