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Functional Imaging and Modeling of the Heart

Third International Workshop, FIMH 2005
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Proceedings

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Preface

The 1st and 2nd International Conferences on Functional Imaging and Modelling of the Heart (FIMH) were held in Helsinki, Finland, in November 2001, and in Lyon, France, in June 2003. These meetings were born through a fruitful scientific collaboration between France and Finland that outreached to other groups and led to the start of this biennial event. The FIMH conference was the first attempt to agglutinate researchers from several complementary but often isolated fields: cardiac imaging, signal and image processing, applied mathematics and physics, biomedical engineering and computer science, cardiology, radiology, biology, and physiology. In the first two editions, the conference received an enthusiastic acceptance by experts of all these communities. FIMH was originally started as a European event and has increasingly attracted more and more people from the US and Asia.

This edition of FIMH received the largest number of submissions so far with a result of 47 papers being accepted as either oral presentations or posters. There were a number of submissions from non-EU institutions which confirms the growing interest in this series of meetings. All papers were reviewed by up to four reviewers. The accepted contributions were organized into 8 oral sessions and 3 poster sessions complemented by a number of invited talks. This year we tried to allocate as many papers as possible as oral presentations to facilitate more active participation and to stimulate multidisciplinary discussions. Papers were organized around several tracks: anatomical modelling of the heart, electrophysiology, electro- and magnetography, modelling of the cardiac mechanics and function, cardiac motion estimation, and also a miscellaneous section. The order of presentation in these proceedings follows that of presentation at the conference.

For the communities related to this conference, it would be impossible to overlook ongoing international efforts such as Cardiome¹, which tackles the fields of cardiac imaging, and multiscale modelling and simulation of the heart. Cardiome is the first, and possibly currently the most advanced, effort within the Physiome² initiative that is sponsored by the International Union for Physiological Sciences (IUPS). Also related to Physiome is the UK-sponsored project Integrative Biology³, a key part of which relates to projects on the heart. All these efforts aim at developing a vision for computational physiology where knowledge and understanding at every length and temporal scale of the different organic systems of the human body can be integrated through computational models. We believe that FIMH will contribute to several key challenges within Cardiome

¹ <http://www.cardiome.org/>

² <http://www.physiome.org/>

³ <http://www.integrativebiology.ox.ac.uk/>

and, therefore, be of importance to the overall objectives of the Physiome and Integrative Biology projects.

Another important ingredient of FIMH 2005 was the participation of the European Commission through the organization of a satellite workshop entitled *Towards Virtual Physiological Human: Multilevel Modelling and Simulation of the Human Anatomy and Physiology*. This half-day workshop, jointly organized by the Directorate-General Information Society and Media in collaboration with the Institute for Prospective Technological Studies (IPTS), further motivated the conference by presenting progress to date, providing a wider perspective on modelling and simulation, and allowing the exchange of ideas about this exciting topic.

Finally, we would like to take the opportunity to thank all the authors for the outstanding contributions to FIMH, and the Program Committee and additional reviewers for their invaluable efforts in a timely review process. Last but not least, we would like to express our gratitude to all the sponsoring and organizing institutions for their support of this conference.

We hope that the attendees enjoyed the atmosphere and program of the conference and we hope to see you again at FIMH 2007.

June 2005

Alejandro F. Frangi
Petia Radeva
Andres Santos
Monica Hernandez

Acknowledgments

The members of the Program Committee deserve special thanks for their work in reviewing all the papers, and for their support in the organization of the conference.

We thank the members of the Pompeu Fabra University, the Autonomous University of Barcelona and the Polytechnic University of Madrid for their involvement and support in the organization of this conference.

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