

Foreword

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This special issue of *Microgravity Space and Technology*, MST, is dedicated to the European Low Gravity Research Association, ELGRA, biennial symposium held in Florence, Italy, on September 4–7, 2007.

The symposium has been organized jointly with the XX national meeting of the Italian Association for Aeronautical and Space Medicine, AIMAS, at the Institute of Military Aeronautical Sciences, in an architectural complex which is considered one of the most beautiful examples of “functionalism” in Europe.

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Due to the large number of participants, the scientific program was mostly organized in parallel sessions. Very interesting joint sessions with AIMAS were also arranged. The symposium was enriched with a welcome of the local authorities in the Salone dei Cinquecento at Palazzo Vecchio, a gala dinner in the court of the Palazzo del Bargello with a baroque concert, and a visit to the Specola Museum and Tribuna di Galileo Galilei. On the last day, a training with an aeromedical evacuation helicopter demonstrated the technical and organizational aspects of search and rescue, SAR, operations.

During the symposium, ELGRA prizes were awarded to the winners of the undergraduate student competition in life and physical sciences. Six selected teams were invited by ELGRA and ESA to attend the symposium, presenting oral communications and posters. The winners of this “student contest”, one team for life sciences and one team for physical sciences, were elected by the audience attending their presentations.

The ELGRA symposium is traditionally the opportunity to reward two of the most renowned and distinguished ELGRA members. In Florence, the ELGRA medals were given to Dr. Jan Vreeburg, for his outstanding results in microgravity fluid dynamics and to Prof. Gérard Perbal, for his exceptional work in plant physiology in microgravity.

Within the framework of the symposium, two events of special interest were organized: i) a round table with representatives from ESA, chaired by Dr. Daniel Beysens and Dr. Jack van Loon, concerning the perspectives of low gravity research within Europe and, particularly, the new program ELIPS 3 and ii) a workshop on the concept of a large radius human centrifuge for physiological studies chaired by Dr. Jack van Loon.

The ELGRA General Assembly is an important item during the biennial symposium. It is the organ for the election of the Management Committee. The Management Committee members, Dr. Valerie Legue and Prof. Felice Strollo, resigned from their office in September, 2007. Dr. Daniel Beysens, having finished his term as President, the Assembly elected a new President, Dr. Jack van Loon. New members, Prof. Javier F. Medina and Prof. Floris L. Wuyts, have also been elected.

In the name of the ELGRA Management Committee, we guest editors of this volume Daniel Beysens, Hendrik Kuhlmann, Jack van Loon and Monica Monici, the latter as local organizer of the symposium, express our sincere thanks to:

- The Italian Association for Aeronautical and Space Medicine, which organized the XX national meeting jointly with the ELGRA biennial symposium, initiating a collaboration to the benefit of the common scientific interests of both societies destined to grow.
- The Institute of Military Aeronautical Sciences for the kind hospitality and for the invaluable assistance in the organization of the symposium.
- The European Space Agency for continuously supporting ELGRA activities and for the support to the student contest.
- The sponsors of the symposium: Galileo Avionica S.p.A., Ente Cassa di Risparmio di Firenze, Nikon Instruments S.p.A., ASA s.r.l., Kayser Italia s.r.l., National Institute for Cardiovascular Research, Banca Federico del Vecchio S.p.A. and Banco di Sicilia S.p.A.

But most of all we would like to thank all the participants, who stimulated the symposium by presenting and discussing the results of their research and thereby contributing to the advancement of gravity and space flight related sciences. In particular, the exchange among experts from the two scientific societies ELGRA and AIMAS has given many new insights into problems of mutual interest.

Some of the presented results have already been published in various journals. Some others are still too preliminary to be published. This volume of MST, however, is a collection of more than 30 of the most significant contributions that have been presented at the symposium either in form of an oral communication or a poster. The collected work provides an excellent overview on the wide range of subjects discussed and the quality of the research presented at the symposium. In particular, we want to highlight the papers written by the ELGRA medallists and the ones by the student teams. The former summarize their experience of a life devoted to research while the latter hold promise for future scientific careers and contributions.

Finally, we wish to mention all those who contributed to the preparation of this volume: the authors, the reviewers for the precious help in improving the quality of the papers and, last but not least, Microgravity Space and Technology, which has made possible the dissemination of the current trends in gravity related research by giving us the opportunity for a special issue on the occasion of the ELGRA Biennial Symposium 2007.

We hope you will enjoy reading this volume and that you will find in it ideas and inspiration for your future research.