



Università degli Studi di Firenze



Dipartimento di Elettronica
e Telecomunicazioni

Dipartimento di Fisica

4th
INTERNATIONAL
WORKSHOP

MODELS
AND ANALYSIS
OF VOCAL
EMISSIONS
FOR BIOMEDICAL
APPLICATIONS

October 29-31, 2005
Firenze, Italy



PROCEEDINGS

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FOR BIOMEDICAL APPLICATIONS**

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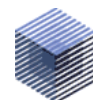
ISCA - International Speech and Communication Association



AIIMB - Associazione Italiana Ingegneria Medica e Biologica



INFN – Istituto Nazionale per la Fisica della Materia





MAVEBA 2005

FOREWARD

Welcome to the 4th International Workshop on Models and Analysis of Vocal Emissions for Biomedical Applications, MAVeBA 2005, 29-31 October 2005, Firenze, Italy.

In the light of previous editions, held in 1999, 2001, and 2003 respectively, all in Firenze, the Workshop aims at investigating into main aspects of voice modelling and analysis, ranging from fundamental research to all kinds of biomedical applications and related established and advanced technologies. It offers the participants an interdisciplinary platform for presenting and discussing new knowledge both in the field of models and analysis of speech signals and in that of emerging imaging techniques.

Contacts between specialists active in research and industrial developments could take advantage from the Workshop structure, comprising both Special Sessions devoted to a set of relevant topics, and standard Sessions, covering a wide area of voice analysis research, for biomedical applications.

Four Special Sessions were organised and co-ordinated by specialists in the field, collecting contributions about new and emerging techniques. Each Session is introduced by a review paper, presenting the state-of-the-art in the field, pointing out present knowledge, limitations and future directions. The selected topics are:

1. Voice pathology classification
2. Physical and mechanical models and devices
3. Methods for voice measurements
4. Neurological dysfunctions

As for regular Sessions, the relevant topics are: voice recovering, enhancement of voice quality during rehabilitation and after surgery, voice modelling and analysis of vocal emissions, newborn and infant cry analysis, singing voice. A short Session is also devoted to non-human sounds, and their possible relationships to humans.

All the papers collected in this book of Proceedings are of high scientific level, as they were reviewed by at least two anonymous referees, and cover the most relevant fields of research in voice signals and images analysis. We would like to thank the members of the organising committee and all the reviewers, who gave freely of their time to assess the highly disparate work of the workshop, helping in improving the quality of the papers.

We have also benefited from the efforts of the administrative staff within our University: office for Research and International Relations, Logistic office, and the staff of the Faculty of Engineering and of the Department of Electronics and Telecommunications, that devoted a lot of time and efforts to make this workshop a successful one. Special thanks to our University Orchestra and Chorus, and to the members of “Capriccio Armonico” dancing group for their generous participation.

Finally, our gratitude goes to the supporters and sponsors, who contribute much to the success of the MAVeBA workshop.

Dott. Claudia Manfredi
Conference Chair

Prof. Piero Bruscazioni
Conference Chair