

FOREWORD

Special issue on introduction to the amazing world of sounds with demonstrations

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1. INTRODUCTION

Under certain conditions, the auditory system shows a number of amazing behaviors. Some of them are unique and probably have significant importance in the perception of sounds. For example, we sometimes hear components that are actually missing or certain sounds are heard as if they are continuous even though they are physically intermittent. These phenomena are sometimes illusory. It had been difficult, however, to describe these phenomena in articles without audio demonstrations. Even some fundamental properties of sounds, such as velocity, are not easily understood without visual demonstrations.

Thanks to the remarkable progress of information technologies, it is possible to search and access various types of media data existing somewhere in the world by clicking the mouse. The Acoustical Society of Japan has its own WWW site, that is

<http://www.asj.gr.jp/index-en.html>.

This site provides a large amount of information. The recent issues of the journal 'Acoustical Science and Technology' can be viewed online. These technologies make it possible to publish articles with audio and audio-visual demonstrations.

This special issue entitled 'Introduction to the amazing world of sounds with demonstrations' is released to introduce some of the interesting properties of sounds and the perception of sounds. Each article is accompanied by audio or audio-visual demonstrations that are available online, so that the readers can experience the phenomena by themselves. Some unique materials for education in acoustics are also introduced.

Not only the phenomena are introduced, but each article also provides scientific considerations on each topic. These phenomena are closely related to some of the important features of the auditory system, for example, speech perception, spatial listening, auditory scene analysis and audio-visual interaction. The study of these phenomena will give us insights into the physics of sounds, functions of the peripheral and central auditory system and even the

properties of the central nervous system. Some of the topics have already been published in the Journal of the Acoustical Society of Japan in Japanese [1]. In the future, full academic papers with demonstrations will be published in Acoustical Science and Technology.

Please read the following sections for further information and instructions about the demonstrations.

2. ACCESS TO SUPPLEMENTARY MEDIA FILES

Each article provides supplementary media files. To view and listen to the files, access the following internet web page.

<http://www.asj.gr.jp/2006/data/ast2706.html>

This page contains hyperlinks to all articles in the PDF format and hyperlinks to the table of contents of the supplementary media files. The media files also can be accessed by clicking on the underlined words in the PDF articles.

A CD-ROM, which includes all articles in the PDF format and supplementary media files, will be attached to the Journal of the Acoustical Society of Japan vol. 63, no. 4, which will be published in April, 2007.

The formats of the media files are WAV (Microsoft RIFF audio, 16-bit resolution and 44,100 Hz sampling, mono or stereo), MPEG-1 video, a SWF (Macromedia Flash) animation and an executable binary of Microsoft Windows.

3. COPYRIGHTS AND MORE

The copyrights of all of the supplementary media files in this special issue are held by the Acoustical Society of Japan. The authors of each article have the rights of modification, copying, and published transmission of the contents of their media files.

Those who access the supplementary media files only have rights to listen to and/or watch the contents.

REFERENCES

- [1] "The special issue Amazing world of hearing," *J. Acoust. Soc. Jpn. (J)*, **61**, 260-294 (2005).