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C H R O N I C L E

General Assembly of Delegates of Polish Acoustical Society

On September 13th in Zakopane took place the General Assembly of Delegates of Polish Acoustical Society (PAS). In Assembly the new Authorites of PAS were elected.

In 1999–2000 term the Authorities are:

President of PAS – prof. Jerzy Ranachowski

Main Board:

V-president – prof. Aleksander Opilski
General Secretary of PAS – dr hab. Tadeusz Pustelny
Treasure of PAS – dr Roman Bukowski.

Members of Main Board:

prof. Antoni Śliwiński,
dr Maria Rabiega,
dr Henryka Czyż,
dr Bogumił Linde.

Board of Control:

prof. Roman Salamon,
dr Marianna Mirowska,
dr Lucyna Leniowska,
dr Marek Iwaniec.

Arbitration Court:

prof. Eugeniusz Kozaczka,
prof. Mikołaj Łabowski,
dr Jacek Cieślik.

The General Assembly of Delegates of PAS in the ballet has conferred the Title of Honour Member of Polish Acoustical Society:

doc. Mariannna Sankiewicz (Gdańsk Division of PAS),
prof. Adam Lipowczan (Upper Silesia Division of PAS),
prof. Leif Bjorno (from Denmark).

The ceremony of delivery of Diplomas of Honour Member of PAS will take place at the next Open Seminary on Acoustics in 2000.

The XLVI Open Seminar on Acoustics OSA'99 took place in Zakopane on September 14–17, 1999.

The main Organiser of OSA'99 was Kraków Division of Polish Acoustical Society.

The Seminar was attended by about one and a half acousticians from Poland and even one hundred scientific lectures and short lecture were presented from all acoustic domains. In Seminar were also the guests from Geremany, United Kingdom, Denmark and Russia. According the opinion of participates the scientific level of Seminary was high.

During the Opening Ceremony of OSA'99 there were handed Diplomas of Honour Membership of Polish Acoustical Society to:

prof. Antoni Śliwiński – the many years standing President of PAS,

prof. Jens Blauert – the many years standing Chairmen of the Board of European Acoustic Association.

DISSERTATIONS

Determination of the spatial distribution of spectral components of ship's noise [in Polish]

by Paulina Bittner
23 December 1998
Adam Mickiewicz University, Institute of Acoustics,
Faculty of Navigation, Naval Academy,
ul. Śmidowicza 71, 81-919 Gdynia, Poland
Supervisor: Prof. D.Sc. Eugeniusz Kozaczka

The investigations of vibroacoustic activity of a ship is a topic of interest for technical diagnostics, ecological and military reasons. From the acoustics point of view a ship may be treated as a coaxial sound source. Descriptions of the field distribution for such sources are common in literature. The methods used for solving the radiation problem include analytical solutions, numerical methods and experimental investigations. As a ship is a complex sound source it is difficult to find an analytical description of its radiation in the near field region. Therefore the thesis describes a method which has the elements of a numerical and experimental one. The hull is surrounded with a surface which replaces a ship as a source. Experimentally obtained surface distributions of acoustic quantities are used to calculate the pressure value in any point in space outside the virtual surface. The numerical method applied in the thesis has been worked out basing on the Helmholtz solution of the exterior radiation problem and the superposition method. It was verified by comparing its results with the approximate analytical dependence found out for a simple source of the shape similar to the virtual vibrating surface. The method of measuring the acoustic quantities is described next where the special attention was paid to the particle velocity measurements. The theoretical background is followed with the results of laboratory measurements. The next step was to check the method during "in situ" measurements. They have been carried out in two measuring set-ups over different types of the sea bed. The worked out method can be used to estimate the acoustic noise of the ship during its exploitation.

Quality of synthesized organ pipe sounds versus parameters of the digital waveguide models [in Polish]

by Sławomir K. Zieliński
15 December 1997
Sound Engineering Department, Technical University of Gdańsk,
Contact: Technical University of Gdańsk, Main Library,
ul. Narutowicza 11/12, 80-952 Gdańsk, Poland
Supervisor: Andrzej Czyżewski

The objective of the work was to prove that the digital waveguide models of the organ pipe could be used for synthesis of organ sound with high quality of transient states.

The digital waveguide model of the organ flue pipe was elaborated. This model takes into account both geometrical dimensions of the pipe and air pressure. The elaborated model is computationally efficient, so its implementation on a digital signal processor (DSP) was possible.

The first group of experiments was related to simulations of presssure changes in the elaborated model. Obtained results showed that the simulated pressure affects pitch of the synthesized sound. Moreover, various kinds of overblowing can also be obsereved. This result remains in accordance with real pipe behaviour.

The second group of experiments concerned analysis of the model response to the simulated changes of the pipe mouth and to the simulated changes of the displacement between the upper lip and the air jet. Simulation of changes of the pipe mouth height results in pitch variation, whereas simulated changes of the displacement between the upper lip and the air jet lead to spectral variations (balance between odd and even harmonics). Mentioned results also agree with results of similar experiments concerning real pipes.

The last part of dissertation contains results of systematic subjective tests. These tests showed that synthetic sounds obtained using the elaborated model are satisfactory.

Exemplary synthetic sounds obtained using the elaborated model are attached to the dissertation on the CD-ROM.