

## XXVII OPEN SEMINAR ON ACOUSTICS

Puławy, 15-19 October, 1980

The XXVII Seminar on Acoustics (OSA 80) was held in Puławy on 15-19 October, 1980. It was organized by the Warsaw Division of the Polish Acoustical Society and the Institute of the Fundamental Technological Research of the Polish Academy of Sciences, and the Experimental Department Techpan. The chairman of the Scientific Committee was Prof. Ignacy MALECKI, and the chairman of the Organizing Committee was Dr. Jerzy ETIENNE.

More than 300 persons expressed their wish to participate in the Seminar, out of which 240 from Poland and 13 from abroad (from GDR, West Germany, Czechoslovakia, Greece, Iran and Holland) took part. 155 papers, including four general papers, were delivered. 13 papers were presented in poster sessions. Discussions were held in four parallel sessions in the mornings and afternoons and embraced a main theme, divided into thematic sections:

- I — ultrasound in medicine (section *M*), underwater acoustics (section *H*), piezoelectric and piezomagnetic transducers (section *P*),
- II — physical acoustics (section *B*), acousto-optics, crystals (section *F*), sonochemistry (section *S*), non-destructive testing (section *U*),
- III — architectural acoustics, vibration, noise (section *A*),
- IV — electroacoustics, acoustics of speech and hearing, acoustics of music (section *E*).

The papers accepted for delivery by the divisions of the Polish Acoustical Society and submitted to the Organizing Committee were published by the Publishing Section of the Institute of the Fundamental Technological Research of the Polish Academy of Sciences in two volumes (printed by the Wrocław Scientific Printing-House in 270 copies), and a supplement (printed by the Warsaw Scientific Printing-House in 350 copies). 190 papers, including 2 general ones, were published.

The Marek Kwiek competition was traditionally organized, for which only 9 papers were entered, of which 8 were delivered and evaluated. On behalf of the absent Dr. Z. WĄSOWICZ, Dr. R. GUBRYNOWICZ was responsible for the smooth running of the Seminar, both scientifically and organizationally. Dr. W. STRASZEWICZ and Z. PUŚŁOWSKI, M. Sc., were in charge of the implementation of the scientific programme of the Seminar. Z. PUŚŁOWSKI was responsible for the poster sessions and the round table sessions. The Secretaries of the Seminar who were responsible for administration and catering were G. ŁYPACEWICZ, J. ABŁAMOWICZ-POTAPOWICZ, I. ŻUCHOWICZ, B. WOYCZYŃSKA, K. TULICKA, B. SOSNOWSKA, M. BORKOWSKA. J. DODACKI was responsible for the technical organization.

An exhibition by the company Brüel and Kjaer was open during the Seminar showing the latest developments in electroacoustic measurement techniques. The Experimental Department Techpan also held an exhibition showing their products: ultrasonic apparatus for applications in medicine (diagnostic apparatus) and industry.

Three organizational meetings were held on the first day of the Seminar: a meeting of the Executive Board of the Polish Acoustical Society, the General Congress of the Delegates of the Polish Acoustical Society, and a meeting of the Committee on Acoustics of the Polish

Academy of Sciences. The Seminar was officially opened in the afternoon of the same day. The guests and participants were addressed by the chairman of the Organizing Committee, Dr. J. ETIENNE on behalf of the Organizing Committee, by Z. CZAJKOWSKI, Mayor of Puławy, Prof. Dr. Z. JAGODZIŃSKI on behalf of the Executive Board of the Polish Acoustical Society, Prof. Dr. L. FILIPCZYŃSKI on behalf of the Committee on Acoustics of the Polish Academy of Sciences and Mr. J. SZERSZEŃ, director, on behalf of the director of the Institute of Fundamental Technological Research and Techpan. The uninaugurative general paper: The use of analogy in electroacoustics — in memory of the tragically deceased acoustician J. WEHR, was delivered by the chairman of the Scientific Committee of the Seminar, Prof. Dr. I. MAŁECKI.

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### General papers

- L. FILIPCZYŃSKI, *Methods of ultrasonic visualization in medicine.*  
 C. PUZYNA, *The psychoacoustic aspects of the orientation in space.*  
 A. RAKOWSKI, *Categorical perception of sound phenomena.*

### Papers in sections

#### Section M (chairmen: A. WAGNER, J. KRETOWICZ)

- A. CHROŚCICKI, L. FILIPCZYŃSKI, W. SECOMSKI, *Measurements of blood velocity in the tricuspid valve in children and youths by Doppler methods.*  
 L. HIRNLOWA et al., *Doppler ultrasound examination in the diagnosis of the carotid occlusive disease.*  
 L. HIRNLOWA et al., *Curve of blood flow velocity in the jugular vein in the diagnosis of intracardiac shunt.*  
 L. HIRNLOWA et al., *Estimation of the left ventricular performance in patients with previous myocardial infarction on the basis of the aortic blood flow velocity tracings by the ultrasound Doppler method.*  
 A. WAGNER, *Analysis of the blood velocity changes following extrasystole.*  
 A. WAGNER, *Influence of respiration on blood flow velocity in man.*  
 K. IWASZKIEWICZ, I. GIŻYCKA, A. CHROŚCICKI, A. HELCZYŃSKA, T. POWAŁOWSKI, *Quantitative examinations of the blood flow velocity in the femoral artery in children with varctation of aorta.*  
 K. IWASZKIEWICZ, T. POWAŁOWSKI, *Quantitative measurements of the blood flow velocity in the periarterial arteries of children with patent ductus artery.*  
 J. CZAJKOWSKI, *Doppler ophthalmosonographic evaluation of the blood flow velocity in stenosis and thrombosis of the carotid artery.*  
 J. ETIENNE, T. POWAŁOWSKI, M. WOJTKOWIAK, *Application of the ultrasonic Doppler method to the evaluation of the human condition during acceleration.*  
 L. FILIPCZYŃSKI, *Attempt to evaluate the detectability of blood vessels by ultrasonic echo method.*  
 J. WESOŁOWSKI, G. ŁYPACEWICZ, *Ultrasonography in aneurism diagnosis.*  
 J. GRONIEWSKI, J. KRETOWICZ, I. RUSZKOWSKI, *Ultrasonographic diagnosis of fetal abnormalities.*  
 D.K. NASSIRI, C. R. HILL, *Absolute measurement of volume scattering cross-section for human tissues.*  
 H. GAWDA, J. BEDNARA, *Propagation of ultrasonic waves in a wheat stalk and its anatomy.*

## Section H (chairmen: A. STEPNOWSKI, R. SALAMON)

- D. RUSER, *Signal analysis in hydrolocation.*
- L. KILIAN, *Model of reverberation in the hydroacoustic channel.*
- L. KILIAN, *Reverberation background level setting in sonar receivers.*
- L. KILIAN, *On some problems of the reception of sonar signals in the presence of reverberation and noise.*
- R. BOBER, A. DYKA, *Filter bandwidth analysis for the sonar pulse interfered by reverberation.*
- H. CHODKIEWICZ, E. KOZACZKA, *Influence of the flexible connection of the ship engine with its foundation on the level of underwater acoustic disturbances.*
- A. DYKA, J. MARSZAL, *Deconvolution filter for resolution improvement of rectangular sonar pulses.*
- A. DYKA, Cz. GUT, *Optimization of coherent coded words for sonar pulse compression.*
- A. CHMIELARZ, *Digital filter for the sonar beamformer.*
- Z. CZARNECKI, A. KOWALSKI, W. LIS, *System for ultrasound transponder localization - I - range.*
- Z. CZARNECKI, A. KOWALSKI, W. LIS, *System for ultrasound transponder localization-II-depth.*
- Z. CZARNECKI, A. KOWALSKI, W. LIS, *System for ultrasound transponder localization-III-direction.*
- S. KUBICA, T. KRUSZEWSKA, *Acoustic properties of diver masks.*
- D. Hamann, *Normal modes in a cylindrical system.*
- A. STEPNOWSKI, *Equivalent beam width and its relations to moments and distribution of the beam pattern.*
- A. STEPNOWSKI, Z. CZARNECKI, *Design of the beam pattern of the transducer array of a side scanning sonar.*
- J. MARSZAL, H. LASOTA, *Hydrophone array.*
- J. MARSZAL, H. LASOTA, *Apparatus for hydrophone array beam synthesis:*

## Section P (chairmen: Z. KACZKOWSKI, Z. JAGODZIŃSKI)

- H. LASOTA, R. SALAMON, *Method for the analysis of the broadband wave acoustic field.*
- W. LIS, R. SALAMON, *Application of the impulse response in determination of the dynamic parameters of ultrasonic transducers.*
- W. PAJEWSKI, *Acoustic lines with active elements.*
- T. WASZCZUK, J. SOMER, *Development of phase annular array system for mechanical contact scanning.*
- B. PIWAKOWSKI, H. LASOTA, *Simple matrix model of an acoustic imaging system.*
- J. GOLANOWSKI, T. GUDRA, Z. IANNELLI, *Analysis of a disk type piezoelectric transducer by the finite element method.*
- Z. KACZKOWSKI, *Dependence of the mechanical quality factor on the magnetic field in a 33 kHz ultrasonic alcofer transducer.*
- Z. SIWKIEWICZ, W. FIŁIPOWICZ, *Influence of ultrasonic vibration of the matrix on the intensification of the production of thin-walled metal powder cylinders.*
- J. LEMANOWICZ, A. SKRZYNECKI, Z. RODOWALD, *Ring shaped transducers in wire cleaning.*
- J. LEMANOWICZ, A. SKRZYNECKI, Z. RODOWALD, *Influence of the liquid level on the acoustic load of an ultrasonic transducer and cavitation erosion.*

## Section B (chairman: E. SOCZKIEWICZ)

- W. BANDERA, *Useful frequency range in the mechanical impedance method for the determination of the dynamic properties of viscoelastic materials.*
- L. LIPIŃSKI, *Ultrasonic relaxation of strains.*

- W. ZIÓLKOWSKI, *Role of the mass impedance of the measuring head in the complex elastic modulus by the driving-point impedance method.*
- T. ZAMORSKI, R. WYRZYKOWSKI, *Extension of the theoretical model of dynamic flow generators for higher feeding pressures.*
- T. GUDRA, E. TALARCZYK, *Method for increasing the efficiency of a high-energy liquid jet by ultrasound.*
- J. LEWANDOWSKI, *Relations between the acoustic field and the structure of a solid random medium.*
- C. ROSZKOWSKI, *Propagation of nonlinear spherical acoustic waves.*

Section F (chairmen: W. PAJEWSKI, J. NARKIEWICZ-JODKO)

- A. KLIMASEK, A. OPILSKI, J. ZABAWA, *Effect of doping with elements of groups III and V on the elastic constants of the Si crystals.*
- Z. KLESZCZEWSKI, A. KWAŚNIEWSKA, *Acoustic properties of GaP crystals.*
- M. KRZESIŃSKA, A. KRZESIŃSKI, A. OPILSKI, T. ŁUKASIEWICZ, *Three-phonon processes in  $Bi_{12}GeO_{20}$ .*
- O. DELEKTA, A. OPILSKI, *Acoustic investigations of single crystals  $K(H_{1-x}D_x)_2PO_4$  in the frequency range 10 MHz – 750 MHz.*
- E. DRESCHER, *Dislocative attenuation in deformed Cu single crystals.*
- Z. TYLCZYŃSKI, *Temperature changes of a quasi-longitudinal ultrasonic wave propagating in the (010) plane of TGS crystals.*
- A. PILARSKI *Propagation of surface waves in thin layers on a half space for different boundary conditions.*
- Z. JAKUBCZYK, A. KRZESIŃSKI, E. GRUSZKA, *Surface waves in a ZnO-glass layer system.*
- M. SZALEWSKI, *Thin film waveguides of surface waves.*
- E. DANICKI, *Simple equivalent circuit of interdigital transducers.*
- R. TAJCHERT, P. KACZMARSKI, A. LESZCZYŃSKI, J. NARKIEWICZ-JODKO, *Propagation of bulk acoustic waves generated by an interdigital transducer.*
- J. BERDOWSKI, M. STROZIK, *Investigations of elastic waves generated by an interdigital transducer using acousto-optic methods.*
- Z. KLESZCZEWSKI, *Elastic and photoelastic anisotropy of selected acousto-optic crystals.*
- Z. KUBIK, *Effect of the humidity of air on the value of an acoustoelectric effect.*
- I. WOJCIECHOWSKA, A. ŚLIWIŃSKI, *Optical holography with a modulated reference beam used for examination of the vibration of ultrasonic transducers.*
- P. KWIEK, A. MARKIEWICZ, A. ŚLIWIŃSKI, *Optical holograms of an ultrasonic wave with a modulated reference beam.*
- P. LORANC, *Ultrasonic binding of volumetric acoustical transducers to an acousto-optical medium.*

Section S (chairman E. TALARCZYK)

- E. SOCZKIEWICZ, *Correlations between thermodynamic fluctuations in liquids and the ultrasound velocity.*
- J. BEDNAREK, J. GOLANOWSKI, E. TALARCZYK, *Ultrasonic measurement of the solid phase content in water suspension.*
- R. HNATKÓW, *Absorption of sound waves in  $CaCO_3$  aerosols.*
- W. KASPRZYK, J. BERDOWSKI, J. GMYREK, H. KRÓL, *Approximation of the atomization of fuel by an ultrasonic micropulser using the splines functions.*

## Section U (chairmen: E. DRESCHER, J. DEPUTAT)

- S. HARUMI, *Computer simulation of propagation of ultrasonic waves in solid media (film).*  
 J. DEPUTAT, *Application of ultrasonic tensometry.*  
 A. BRÓKOWSKI, *Reflection of ultrasonic beams at critical incidence angles.*  
 B. KUŚMIDER, E. KANIA, A. PILARSKI, *Bond quality evaluation in the valve of the marine engine.*  
 R. RYLL-NARDZEWSKA, W. MIKIEL, M. ZDANOWICZ, *Method of acoustic emission in the investigation of mechanical strength of ceramic - metal seals.*  
 S. PILECKI, J. RANACHOWSKI, F. REJMUND, *Acoustic emission generated by moving dislocations.*  
 W. KOŁTOŃSKI, *Application of acoustic echo method in non-destructive testing in mining and hydrotechnic building.*  
 P. PAWŁOWSKI, L. KILIAN, *Ultrasonic level meter for energetic gas in steel bottles.*  
 I. AUERBACH, W. SZACHNOWSKI, *Ultrasonic inspection of a plastic - metal joint of an aircraft ski.*  
 B. PEŃSKO, E. DURIASZ, *Optimization of the shape of fatigue samples used in ultrasonic investigations.*  
 A. PILARSKI, *Reflection of incident normal ultrasonic waves from interface with finite rigidity.*  
 A. PILARSKI, J. SZELAŻEK, *Remarks on the ultrasonic pulse velocity measurement in bounded medium.*  
 J. NARKIEWICZ-JODKO, A. LESZCZYŃSKI, P. RAJCHERT, *Ultrasonic velocity measurements of bulk and surface waves by the sing-around method.*

## Section A (chairmen: W. STRASZEWICZ, J. SADOWSKI, S. CZARNECKI, A. LIPOWCZAN, R. PANUSZKA)

- A. KULOWSKI, *Statistical parameters of a numerical model of the acoustic field in the enclosure*  
 E. BROMBERG-ZIĘBA, J. ZALEWSKI, *Computer simulated model of the reverberation process for experimental investigations of the acoustic properties of auditoria.*  
 T. LIPIŃSKI, K. MUZALEWSKI, *Reverberation time of recessed rooms.*  
 H. IDCZAK, A. JAROCH, *Analysis of the amplitude of scattering sound wave on the rigid surface with irregularities.*  
 K. ŚRODECKI, B. NIENALTOWSKI, *Application of correlation analysis for identification of periodic reflections (flutter echo) in rooms.*  
 J. DYŻEWSKI, *Measurements of listening conditions in the Open Air Opera in Sopot.*  
 A. WITKOWSKI, *Sound diffusivity evaluation by optical model measurements.*  
 H. KUSEK, *Optical technique for the determination of isophonic lines.*  
 F. SUJKOWSKI, *Principles of selection of prefabricated sheet metal elements for given noise conditions.*  
 I. ŻUCHOWICZ, *Resonant frequency of slit resonators.*  
 S. WEYNA, *Vibro-acoustic parameters of ship floors.*  
 A. IŻEWSKA, *Nelson's method and its application in the statistical analysis of traffic noise on the model scale.*  
 E. TZEKAKIS, G. PAPANIKOLAOU, *Prediction and measurements of noise in an urban area.*  
 J. SUŁOCKI, L. LIPIŃSKI, B. NIENALTOWSKI, K. ŚRODECKI, J. KONOPACKI, L. TARGOŃSKI, *Investigation of city noises in the case of Gdynia.*  
 E. TZEKAKIS, S. KONIDARIS, *Measurements of the noise field of balconies.*  
 R. MAKAREWICZ, *Green belt as an acoustic barrier.*  
 J. MIAZGA, J. BAK, K. JANICKA, *Effect of noise on the performance of truck drivers.*

- B. RUDNO-RUDZIŃSKA, B. DEMEL, M. RABIEGA, J. ZALEWSKI, *Noise from a single vehicle in flowing traffic.*
- D. AUGUSTYŃSKA, *Infra-sonic noise generated by piston compressors. Methods of measurement, evaluation and control.*
- R. MICHAŁSKI, D. TRYNKOWSKA, *Speech intelligibility in noise when using ear protectors.*
- Z. JAGODZIŃSKI, *Ultrasonic measurements of vibrations.*
- W. CHOLEWA, *Model of objects for diagnostic investigations.*
- A. LIPOWCZAN, *Analysis of the acoustic wave generation in the linear coal-cutting process.*
- W. MOCZULSKI, *Analysis of the shape of vibration time series emitted by a gearbox.*
- D. NITECKI, J. MÓTYLEWSKI, *Vibroacoustic diagnostics of slide bearings in the process of quality control in the production of motor-car engines.*
- R. PANUSZKA, Z. ENGEL, *Application of loose materials for the reduction of vibroakustical power in foundry machines.*
- K. DYSZLEWSKI, *Quarter-wave silencers for power plant fans.*
- C. RYBICKI, *The factor of "easiness of play" in mouth harmonicas.*
- S. CZARNECKI, A. LIPOWCZAN, Z. NIECZYPORUK, *Problem of the determination of the aero-acoustical parameters for microphone windscreens.*

Poster form session of Section A

- Z. PUSŁOWSKI, M. STAWIARSKI, *Absorbing and insulating industrial partitions.*
- J. ABLAMOWICZ-POTAPOWICZ, G. BRZEŃKA, T. MINDAK, S. PODRAZA, *Acoustic design of a protective area for ZWCH "Chemitex-Celwiskoza" at Jelenia Góra.*
- J. DODACKI, *Incombustible slit and plate resonators.*
- W. MRUKWA, W. BEBŁO, *Experimental results of the dependence of noise attenuation on some plastic materials used for construction of the ear protectors.*
- Z. ENGEL, E. ZALEWSKA, J. ZALEWSKI, *Geometrical method to estimate the acoustic energy transmitted through a hole.*
- F. SUJKOWSKI, *Principles of selection of prefabricated sheet-metal elements for given noise conditions.*

Section E (chairmen: J. ZALEWSKI, S. CZARNECKI, A. RAKOWSKI, H. HARAJDA, R. GUBRYNOWICZ, J. KACPROWSKI)

- B. ROGALA, R. ZMONARSKI, *Problem of optimizing the method of measuring nonlinear distortions in the electroacoustical channel radio receivers.*
- S. NUCKOWSKI, J. SZYMBOR, *Spectral verification of a nonlinear model of an electroacoustical system.*
- W. RDZANEK, *Acoustic impedance of a circular membrane for the excitation vibration.*
- P. PERZ, P. JABŁOŃSKI, *Holographic investigations of the vibration patterns of electroacoustic transducers.*
- K. RUDNO-RUDZIŃSKI, *Lay-out of loudspeakers versus stereophonic listening area.*
- R. MAKOWSKI, *Influence of acoustic conditions of the recording room on some parameters of stereophonic signals.*
- B. BOGUSZ, A. JAROCH, *Investigations of the gradient method of sound power determination in an acoustic tube.*
- S. CZARNECKI, *Transfer function method for the evaluation of the effect of the conditions of the surroundings on the effectiveness of obstacles.*
- S. CZARNECKI, R. JANCZUR, E. KOTARBIŃSKA, E. WALERIAN, *Influence of external conditions on the effectiveness of barriers and mufflers.*

- B. RUDNO-RUDZIŃSKA, K. RUDNO-RUDZIŃSKI, *Selection of a tweeter for a multi-way loud-speaker system in terms of power.*
- A. RAKOWSKI, A. MIŚKIEWICZ, *Tuning of musical intervals with sinewave, triangle-wave and square-wave tones.*
- M. GRZYCZYŃSKI, *Discrimination of slight changes in the sound frequency by patients of different ages.*
- M. GRZYCZYŃSKI, *Discrimination of slight changes in the sound frequency with pathology of the hearing organ.*
- M. GRZYCZYŃSKI, *Influence of musical education on the discrimination of slight changes in the sound frequency.*
- J. FIK, *Sensitivity of musical hearing to pitch changes.*
- H. HARAJDA, *Intonation of melodic intervals by children of average musical ability.*
- S. PRUS, *Does the psychometric function behaviour confirm the neural quantum theory?*
- A. HAJDUKIEWICZ, *Investigation of audio-visual analogies.*
- D. GRZYCZYŃSKA, B. LATKOWSKI, *Studies of the effect of the sound phase change on hearing localization.*
- J. FLORKOWSKI, *Influence of the rise time of a pulse on the accuracy of the localization of a sound source in a horizontal plane.*
- H. SIEŃKOWSKA, W. MIKIEL, P. ŻARNECKI, B. WIERZCHOWSKA, *Rhythmic and melodic organization of speech in children with hearing impairment.*
- K. MLIČKA, *Momentary pitch of a signal of frequency transitions.*
- W. NOWAKOWSKA, P. ŻARNECKI, *Computer model for the determination of acoustic parameters of the vocal tract analogue.*
- B. ADAMCZYK, W. KUNISZYK-JÓŹWIĄK, Z. SKORZYŃSKI, J. CZARNOTA, *Analogue digital echo-reverberation speech corrector.*
- W. MAJEWSKI, J. JURKIEWICZ, *Speaker identification over telephone lines.*
- R. SIWANOWICZ, J. SOBKOWSKI, J. SZUBERT, *Application of linear prediction to spectral coding of a speech signal using the Walsh function.*
- H. KUBZDELA, *Visualization of a speech signal using binary spectrograms.*
- R. GUBRYNOWICZ, *System for a detailed analysis of acoustic signals, and particularly speech signals.*
- W. JASSEM, *Computer - assisted recognition of English vowels.*
- W. WIEŻŁAK, R. GUBRYNOWICZ, *Preliminary segmentation of speech in the recognition of isolated words.*
- J. KAMIŃSKI, *Segmentation of a certain class of signals by means of sample similarity measures.*
- J. KAŹMIERCZAK, *Utilization of pattern homology measures in the analysis of acoustic signals.*
- J. ZAŁEWSKI, H. JURKIEWICZ, *System for the vocal-pitch estimation by homomorphic analysis.*

The seminar included a Round Table Conference on 18-19 October on the subject of "Acoustic fields in industrial halls". 35 persons from the following institutions took part in the Conference: Warsaw Technical University; Institute of the Fundamental Technological Research of the Polish Academy of Sciences, Warsaw; MBP Warcent, Warsaw; COBR PJB, Katowice; BP Bistyp, Institute of Wood Technology, Warszawa; PPB Bistyp, Legionowo; Agromet-Projekt, Poznań; ZFDWSO, Zielona Góra; SPBiKS, Gorzów Wielkopolski; Department of Acoustics, Poznań University; Institute of Aviation, Warsaw; ZUK UNIPROT, Warsaw; PKNMiJ, Warsaw; ITA, Wrocław Technical University; Polish Radio and Television, Szczecin; OBiKS, Poznań; Szczecin Technical University.

The sessions were chaired by Prof. Stefan CZARNECKI. The secretaries of the sessions were Dr. J. ABŁAMOWICZ-POTAPOWICZ (BP Warcent) and Z. PUŚŁOWSKI, M. Sc. (Bistyp). The participants in the Conference draw attention to the imperfect methods currently used in design, which are based on classical relations resulting from a statistical method of acoustic field analysis. When the properties of the field resulting from the configuration of the indus-

trial hall are distinctly different from the assumptions of the method, considerable disagreement can be observed between the values resulting from a design of acoustic adaptation and the values measured after its execution. In particular, attention was drawn to the necessity of explaining the use of the values of absorption coefficients shown in catalogues for spatial absorbers that are larger than unity and the necessity of developing standard methods for the acoustical design of industrial halls where the properties of the acoustic field deviate distinctly from the assumptions of the statistical theory.

The discussion touched upon the problem of using digital methods when computers are used. A separate issue was the necessity of deriving principles of economic analysis of the effectiveness of using technical methods for noise reduction.

The participants in the Conference proposed:

(a) expansion of the range and acceleration of scientific research connected with the acoustic properties of industrial halls, which should lead to the development of better design methods that can be easily used by designers,

(b) the development of methods of economic analysis of the effectiveness of using technical methods for acoustic energy reduction in industrial halls,

(c) the development of ways for the better utilization of sound absorbing and sound insulating materials and elements made in Poland,

(d) the standardization of measurement methods used to determine the properties of the acoustic field in industrial halls in order to achieve better agreement between design calculations and measured results.

The director of the Metal-Sheet Processing Company (Bistyp, Legionowo) offered an unused hall owned by the company for experimental research. This may be an essential part in the implementation of proposal *a*.

In addition to the above specialist Round Table Conference, there were unofficial discussions which doubtless contributed to the free exchange of scientific thought and closer relations in the acoustical community.

The next, XXVIII Seminar on Acoustics will be organized by the High Silesian Division of the Polish Acoustical Society.

*Jerzy Etienne, Witold Straszewicz*  
(Warsaw)

### ACOUSTICAL EVENTS IN 1982

#### Winter School on Machinery Diagnostics Wisla, January 1982

|                       |   |
|-----------------------|---|
| Organizer             | Institute of Transport, Silesian Technical University |
| Organizing committee: | Prof. L. Müller                                       |



**8th Colloquium on Acoustics  
Budapest, Spring 1982 (Hungary)**

Organizing committee: OPAKFI, Anker koz. 1, 1061 Budapest (Hungary)

**VI Latin American Meeting on Acoustics  
Mexico, Spring 1982**

Meeting of the Acoustical Society of America  
Chicago, 26-30 April 1982 (USA)

Organizing committee: Mahlon D. Burkhard,  
Industrial Research Products, Inc, 321 North Bond St,  
Elk Grove Village, Illinois 60007 (USA)

**INTER-NOISE 82  
San Francisco, 16-19 May 1982 (USA)**

Sponsor: I/INCE  
Organizing committee: Dr W.W. Lang  
Language: English

**3rd FASE CONGRESS  
Göttingen, 13-17 September 1982 (RFN)**

Sponsor: FASE and DAGA  
Range: Aeroacoustics, psychological acoustics, construction  
acoustics, structure-borne sound, underwater acoustics,  
nonlinear acoustics  
Organizing committee: FASE 82, c/o

Physikalisch-Technische Bundesanstalt,  
Post Box 33 45,  
D-3300 Braunschweig (RFN)

**Noise Control Conference 82  
Kraków, 20-22 September 1982**

Sponsor: Committee on Acoustics of Polish Academy  
of Sciences, Polish Acoustical Society  
Organizer: Institute of Mechanics and Vibroacoustics,  
Academy of Metallurgy and Mining  
Organizing committee: Prof. dr Zbigniew Engel,  
Institute of Mechanics and Vibroacoustics,  
Academy of Metallurgy and Mining,  
Kraków, Mickiewicza 30

**21st Acoustical Conference on Noise and Environment  
Vysoké Tatry, October 1982 (CSRS)**

**Organizing committee:** Ing. L. Goralikova  
House of Technology, Skultétyho Street,  
881 30 Bratislava (CSRS)

**Meeting of Acoustical Society of America  
Orlando, 8—12 November 1982 (USA)**

**Sponsor:** ASA  
**Organizing committee:** Joseph R. Blue  
Naval Research Laboratory, P.O. Box 8337,  
Orlando, Florida 32856 (USA)

Physikalisches Institut  
Post Box 33 47  
D-3300 Braunschweig (FRG)

Notes Central Conference 82  
Kielcewy 20422 September 1982 004

Committee on Acoustics of Polish Academy  
of Sciences, Polish Acoustical Society  
Institute of Acoustics and Vibration  
Academy of Metallurgy and Mining  
Prof. dr Zbigniew Engel  
Institute of Acoustics and Vibration  
Academy of Metallurgy and Mining  
Katow, Mikołowska 30 1. 01