

CONGRESS REPORT I
of the
FOURTH INTERNATIONAL CONGRESS
ON ACOUSTICS
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CONTRIBUTED PAPERS

Dr. A. Kjerbye Nielsen
Editor

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Preface

The Organization Committee of The Fourth International Congress on Acoustics has found that the value of the Congress will be increased to a considerable extent if the manuscripts for the papers of the delegates are available already at the opening of the Congress. Thus, it will be far easier to the individual congress members to select the papers of which they want to attend the reading than in the case they are guided by a short summary only. Furthermore - and this is maybe the most important thing - the members of the Congress will be able to study the manuscripts during and immediately after the Congress instead of having to wait for one year before these are available to the public.

The authors have been very obliging to the Organization, and by a thorough rationalization of the production technique it has been possible to postpone the delivery of the manuscripts to June 15th, i.e. approximately two months before the opening of the Congress. Unfortunately, it has, for technical reasons, been completely impossible to accept manuscripts received after the expiry of the time limit.

This publication, Congress Report I, contains all the papers of the members, whereas the invited papers will be printed and published after the Congress in the form of Congress Report II.

Congress Report I is divided into the following ten sections:

1) Speech analysis and synthesis (section G), 2) Physiological and psychological acoustics (section H), 3) Molecular acoustics (section J), 4) Ultrasonics and underwater sound (section K), 5) Noise and noise control (section L), 6) Room acoustics (section M), 7) Electroacoustics (section N), 8) Physical acoustics (section O), 9) Mechanical vibrations (section P), 10) Musical acoustics (section P 5).

This division corresponds to the one to be used during the Congress, and the sequence within each section corresponds to the one planned for the papers.

The Organization Committee extends its best thanks to the United Nations Educational Scientific and Cultural Organization as well as to the Danish Government Fund for Scientific and Industrial Research for the financial support rendered at the publishing of Congress Report I.

Copenhagen, June 15th, 1962.

A.Kjerbye Nielsen.

Vorwort

Das Organisationskomitee für The Fourth International Congress on Acoustics ist der Ansicht gewesen, dass der Kongress erheblich an Wert gewinnen würde, falls die Manuskripte über die Vorträge der Delegierten bereits bei der Eröffnung des Kongresses vorliegen könnten. Dadurch wird es dem einzelnen Kongressteilnehmer viel leichter, diejenigen Vorträge zu wählen, denen er beiwohnen möchte, als wenn nur kurze Zusammenfassungen vorliegen würden. Ferner - und das ist vielleicht das Bedeutendste - werden die Teilnehmer die Manuskripte während des Kongresses und unmittelbar nach seinem Abschluss studieren können und nicht etwa ein Jahr warten müssen, bis sie öffentlich erhältlich sind.

Der Organisation ist von Seiten der Verfasser ein sehr grosses Entgegenkommen gezeigt worden, und mit Hilfe einer durchgreifenden Rationalisierung auf dem Gebiet der Reproduktionstechnik ist es gelungen, den Zeitpunkt für die Einlieferung der Manuskripte auf den 15. Juni zu verschieben, d.h. etwa 2 Monate vor Eröffnung des Kongresses. Bedauerlicherweise ist es aus technischen Gründen nicht möglich gewesen, Manuskripte, die nach Ablauf dieser Frist eingegangen sind, zu akzeptieren.

Die gegenwärtige Publikation, Kongress-Bericht I, enthält alle Teilnehmervorträge, während die Plenarvorträge als Kongress-Bericht II nach Abschluss des Kongresses gedruckt und herausgegeben werden.

Kongress-Bericht I ist in folgende 10 Abteilungen aufgeteilt: 1) Sprache, Analyse und Synthese (Sektion G), 2) Physiologische und psychologische Akustik (Sektion H), 3) Molekularakustik (Sektion J), 4) Ultraschall und Wasserschall (Sektion K), 5) Lärm und Lärmabwehr (Sektion L), 6) Raumakustik (Sektion M), 7) Elektroakustik (Sektion N), 8) Physikalische Akustik (Sektion O), 9) Körperschall (Sektion P), 10) Musikalische Akustik (Sektion P 5). Diese Aufteilung entspricht derjenigen, die während des Kongresses zur Anwendung kommt, und die Reihenfolge innerhalb jeder Abteilung entspricht der geplanten Reihenfolge der Vorträge.

Das Organisationskomitee bringt The United Nations Educational Scientific and Cultural Organization sowie dem dänischen technisch-wissenschaftlichen Staatsfonds für die ökonomische Unterstützung bei der Herausgabe des Kongress-Berichtes I seinen besten Dank zum Ausdruck.

Kopenhagen, den 15. Juni 1962

A.Kjerbye Nielsen

Avant-Propos

Le comité organisateur du Quatrième Congrès International de l'Acoustique a trouvé que la valeur du congrès augmenterait considérablement, si les manuscrits pour les conférences des délégués étaient disponibles déjà lors de l'ouverture du congrès. De cette façon il sera beaucoup plus facile pour chaque congressiste de choisir les conférences, auxquelles il veut assister, que s'il n'y a à disposition que des résumés très sommaires. D'autre part - et en voici peut-être le point le plus important - les participants auront la possibilité pour étudier les manuscrits durant le congrès et immédiatement après la clôture de celui-ci au lieu d'avoir à attendre environ une année la publication officielle.

Le comité organisateur a trouvé beaucoup de bienveillance de la part des auteurs, et grâce à une rationalisation rigoureuse de la technique de reproduction on a réussi à proroger le délai de la remise des manuscrits jusqu'au 15 juin, à peu près 2 mois avant l'ouverture du congrès. C'est à déplorer que, pour des raisons techniques, il a été tout à fait impossible d'accepter des manuscrits parvenus après l'expiration du délai.

Cette publication, Rapport du congrès I, contient l'ensemble des conférences particulières, alors que les conférences générales seront tirées et éditées à titre de Rapport du congrès II après la clôture du congrès.

Le rapport du congrès I est divisé dans les 10 sections suivantes: 1) Langage, analyse et synthèse (section G), 2) Acoustique physiologique et psychologique (section H), 3) Acoustique moléculaire (section J), 4) Ultrasons et acoustique des fluides (section K), 5) Bruit et lutte contre le bruit (section L), 6) Acoustique des salles (section M), 7) Electroacoustique (section N), 8) Acoustique physique (section O), 9) Vibrations mécaniques (section P), 10) Acoustique musicale (section P 5).

Cette division est conforme à celle venant être appliquée pendant le congrès, et l'ordre de chaque section correspond à l'ordre prévu des conférences.

Le comité organisateur présente ses meilleurs remerciements à l'Organisation des Nations Unies pour l'Education, la Science et la Culture et à Le fonds d'Etat de la Recherche Scientifique et Technique de Danemark du concours économique au tirage du Rapport du congrès I.

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- H11 Proper Evaluation of Audiometric Results. (T. Abdel Alim & E. Essama).
- H12 On Biochemistry of Hearing. (Z. D. Angeluscheff).
- H13 On the concept of the critical band. (E. de Boer & C. E. Bos).
- H14 Etude experimentale de la propagation des ondes acoustiques dans les liquides cochleaires. (M. Burgeat & R. Lehmann).
- H15 Applied Psychoacoustics. (Harold Burris-Meyer & Richmond L. Cardinell).
- H16 Frequency Discrimination of the Human Ear. (B. Lopes Cardozo).
- H17 A Tentative Model on Binaural Hearing (Jaime R. Carbonell).
- H18 Temporal Course of Speech Sound Perception. (Experiments with shadowing and letter writing reaction to consonants). (L. A. Chistovich).
- H19 L'effet d'un bruit blanc contralateral tant sur le seuil absolu que sur le seuil différentiel. (René Chocholle & Christiane Saulnier).
- H21 Some Considerations Concerning the Effects on Hearing of the Noise of Small-Arms. (R. R. A. Coles).
- H22 On the Contribution of Synchronization Patterns to Semantic Meaning. (Ernest Colton).
- H23 Age and Sex Differences in Pure-Tone Thresholds from 18 to 65 Years. (John F. Corso).
- H24 Binaural Hearing and Free Field Effects. (E. E. David, Jr. & R. L. Hanson).
- H25 The Effect of Noise on Hearing in the Egyptian Industrial Schools. (E. Essamma & T. Abdel Alim).
- H26 Computer Simulation of Basilar Membrane Displacement. (James L. Flanagan).
- H27 Physiological Correlates of Binaural Lateralization. (J. L. Flanagan, E. E. David, Jr. & B. J. Watson).
- H28 Free Field Threshold Shift and Temporary Threshold Shift Reduction as Measures of Efficiency of Ear Protective Devices. (John L. Fletcher).
- H29 Le perception du son d'interruption dans la stimulation acoustique intermittente. (Hélène Gavini).
- H31 Perception of Coloration in Filtered Gaussian Noise - Short-Time Spectral Analysis by the Ear. (B. S. Atal, M. R. Schroeder & K. H. Kuttruff).
- H32 Preliminary Report on Comparison of Binaural and Monaural Group Hearing Aids. (John Boyd & Anthony Jamroz).
- H33 Die Bedeutung des vegetativen Nervensystems für die Entstehung des Reizfolgestroms. (Wiktor Jankowski, Jerzy Giełdanowski & Władysław Birecki).
- H34 Effect of Jet-Aircraft Noise on Hearing. (J. J. Knight).

- H35 Der Einfluss des Geräusches auf die Lokalisierung und Verständlichkeit bei der dreikanaligen Stereophonie. (Felix Kolmer).
- H36 Ein Zusammenhang zwischen Schwerpunktsfrequenz, Tiergrösse und akustischer Reichweite. (Th. Lange).
- H37 Etude du potentiel microphonique cochléaire dans diverses conditions modifiant les propriétés mécaniques de l'oreille interne. (J.-P. Legoux).
- H38 Contribution à l'étude du masquage de la parole. (R. Lehmann).
- H39 Some Experiments on the Assessment of Subject Judgement to the Quality and Signal to Noise Ratio of Programme. (D. M. J. P. Manley).
- H41 On the Transmission Characteristic of the Middle Ear. (Aage R. Møller).
- H42 The Implementation of a Hearing Conservation Program. (Keith K. Neely).
- H43 Réponse de l'oreille aux phénomènes transitoires. (Léonid Pimonow).
- H44 Methods for Obtaining Unbiased Rating Scales. (Irwin Pollack).
- H45 Zur Lautstärke einzelner Rausch-impulse. (E. Port).
- H46 Audiometry and Physiological Noise. (E. A. G. Shaw & J. E. Piercy).
- H47 Über die Kurven gleicher Sprachverständlichkeit. (Vera Chalupová & Josef B. Slavík).
- H48 Relative Power Transmission Characteristics of the Ear and the Skull from Hearing Threshold Data. (Ernest L. Smith).
- H49 Middle Ear Muscle Effect on Round Window Responses During Prolonged Sound. (Peter W. Carmel & Arnold Starr).
- H51 The Domain of Existence of the Tonal Residue. (R. J. Ritsma).
- H52 Pressure vs Free Field Thresholds at Low Frequencies. (Wayne Rudmose).
- H53 Loudness Summation in Conductive Deafness. (Bertram Scharf).
- H54 Clinical determination of the acoustic impedance of the eardrum. (K. Terkildsen).
- H55 On the Short Acoustical Signal Intensity Measurement at the First Neuron Level of the Auditory System. (E. A. Radionova).
- H56 Verdeckung von Tönen durch pulsierende Geräusche. (H. Scholl).
- H57 Correlation of Binaural Noise Signals and Sound Image Localization. (A. V. Rinski-Korsakov).
- H58 A Model of Human Pitch-Extraction Based on Additive Correlation. (R. J. Ritsma).
- H59 Auditory Adaption in Pitch Shift Detection. (Andrew Sekey).

Section J: Molecular Acoustics

Investigations of molecular properties by acoustic means

- J11 Sound Velocity in Liquids and Solutions in Relation to the Cell Model Theory of Liquids. (Otohiko Nomoto).
- J12 A New Dissipation Process in Copper, Silver and Gold. (Piero Giorgio Bordoni, Paolo E. Giua & Livio Verdini).
- J13 Sur les anomalies des spectres d'absorption ultrasonore dans les solutions de hauts polymères: Essai d'interprétation. (R. Cerf, S. Candau & R. Zana).
- J14 Mesures d'absorption ultrasonore par des solutions de polymères. (S. Candau, R. Zana & R. Cerf).

- J15 Vergleich der dynamischen Schub-, Elastizitäts- und Kompressionsmoduln von plastifizierten Polyvinylchloriden im Temperaturbereich -80 bis +100° C bei 1 kHz.
(P. Heydemann, A. Zosel & H. Nägerl).
- J21 Ultrasonic Relaxation in Fractionated Polysiloxanes.
(J. L. Hunter & T. B. Lewis).
- J22 Experimental Determination of the Sound Velocity in Liquid Helium at and below the Lambda Point.
(Kenneth A. Shapiro & Isadore Rudnick).
- J23 Die Kinetik des Wachstums und der Auflösung von Monokristallen im Ultraschallfeld.
(A. P. Kapustin).
- J24 Sonolumineszenz in Quecksilber.
(H. Kuttruff).
- J25 Thermal Relaxation in N₂, O₂, and CO with Admixtures.
(Malcolm C. Henderson).
- J26 On Nucleation Processes in Ultrasonic Cavitation and Bubble Chambers.
(M. Bertolotti & D. Sette).
- J31 Vibrational Relaxation in Oxygen-Argon, Oxygen-Helium and Oxygen-Hydrogen Mixtures.
(R. Holmes, F. A. Smith & W. Tempest).
- J32 Ultrasonic Cavitation Measurements by Chemical Methods.
(Alfred Weissler).
- J33 Bordoni Peak in Aluminum.
(Fausta Fanti & Mario Nuovo).
- J34 On the Nucleation Process in Ultrasonic Cavitation.
(Diana Messinò, Daniele Sette & Francesco Wanderlingh).
- J41 A Characteristic Number for the Interaction Between a Sound Field and a Colloid.
(Egon A. Hiedemann).
- J42 Effect of Interstitials Due to Water on the Attenuation and Velocity of Ultrasonic Waves, and on the Thermal Resistance of Sodium Chloride Crystals.
(Warren P. Mason & Konrad Brugger).
- J43 New data on sound velocity in aqueous solutions.
(I. G. Mikhailov).
- J44 Schwingungsrelaxation von CO₂ in Mischungen mit Helium.
(H.-J. Bauer & E. Liska).
- J45 Ultrasonic Vibration Potentials in Polyelectrolytes.
(Jonathan Booker, Ernest Yeager & Frank Hovorka).
- J51 Measurements of Velocity and Attenuation of Sound in Iron up to the Melting Point.
(D. R. Hub).
- J52 Some Acoustic Effects at Phase Changes.
(J. F. W. Bell).
- J53 Dislocation Relaxation in Some B.C.C. Metals.
(Piero Giorgio Bordoni, Mario Nuovo & Livio Verdini).
- J54 The Influence of Texture and Plastic Deformation on the Elasticity of Polycrystalline Metals.
(G. Bradfield).
- J55 Schwingungsrelaxation in flüssigem und festem Brom.
(H. G. Danielmeyer & H. O. Kneser).
- J56 The Origin of Sound Absorption in Water.
(C. M. Davis, Jr. & T. A. Litovitz).

Section K: Ultrasonics and Underwater Sound

Ultrasonic techniques in general

- K11 Ultraschallabsorptionsuntersuchungen an höher konzentrierten, wässrigen Kobaltsulfatlösungen.
(H. Siegert).
- K12 Hypersonic Resonance of Quartz from 3000 to 10 000 Megacycles.
(Ellen S. Stewart & James L. Stewart).
- K13 Pseudonoise-Correlation Techniques in Underwater Acoustic Studies.
(J. L. Stewart & W. B. Allen).
- K14 Trapping of Sound by Density Gradients.
(Ivan Tolstoy).

- K15 Classification and Discussion of Interference Methods for Measuring the Propagation Velocity of Ultrasonic Waves.
(J. S. Wehr).
- K16 The Ultrasonic Travelling Wave Amplifier.
(D. L. White).
- K17 Measurement at High Pressures of the Dynamic Complex Elasticity of Solids and Liquids including Polymers and of Dynamic Viscosity.
(G. Bradfield).
- K21 Acoustics and Oceanology.
(L. B. Brekhovskikh & I. E. Mikhaltzev).
- K22 Low-Porosity Ferrites for High-Intensity Ultrasonic Radiators.
(C. M. van der Burgt & A. L. Stuijts).
- K23 Theoretical and Experimental Studies of the Propagation of Acoustic Impulses in Relaxing Liquids.
(E. F. Carome, P. A. Fleury & W. J. Wagner).
- K24 Ultrasonic Absorption and Relaxation Times in Nitrogen, Oxygen, and Water Vapor.
(Yahai Fujii, Robert Bruce Lindsay & Kiyoshi Urushihara).
- K25 Fluctuating Acoustic Refraction in Deep Ocean Water.
(Norman W. Lord).
- K26 Attenuation of High Frequency Longitudinal and Transverse Waves in Germanium, Silicon and Z-cut Quartz and Their Relation to Thermally Determined Parameters.
(Warren P. Mason, H. J. McSkimin & T. B. Bateman).
- K31 New Trends in Ultrasonic Device Technology.
(John E. May, Jr.).
- K32 Mise en évidence au moyen d'ondes ultrasonores transversales, des variations des constantes élastiques de solides soumis à des contraintes statiques. Application à la détection de faibles anisotropies initiales.
(Suzanne Panthier-Camier).
- K33 Transducer Calibration from Near-Field Data.
(W. James Trott & Robert J. Bobber).
- K34 Quantum Electronics of Optical Phonons.
(C. H. Becker).
- K35 Hysteresis and Residual Stress in Solids.
(Robert W. Benson).
- K36 Hypersonic Attenuation in Fused Quartz at Low Temperatures.
(H. E. Bömmel & C. K. Jones).
- K41 Influence of Large Amplitude Sound Waves upon Aerosol Scrubbing.
(R. M. G. Boucher).
- K42 Mechanisches Verhalten von Polymeren bei sinusförmigen Deformationen grosser Amplitude.
(G. W. Becker & H.-J. Rademacher).
- K43 On the Directivity Control of the Underwater Sound Receiving System.
(Isao Saito, Yasumasa Urabe & Takahiko Otani).
- K44 Relation dans certains liquides ultrasonnés entre la luminescence et la relaxation des cavitations de gaz et de vapeur.
(M. Degrois & B. Badilian).
- K45 The Relationship between Wind Speed and Shallow Water Ambient Noise.
(Frank T. Dietz, J. Steven Kahn & William B. Birch).
- K46 Bestimmung der Stossfrontdicke in Flüssigkeiten aus dem akustischen Spektrum.
(W. Eisenmenger).
- K51 The Measurement of Liquid Borne Ultrasonic Power.
(F. E. Freeman & E. A. Lloyd).
- K52 Time Dependent Optical Methods for the Study of Ultrasonic Waves.
(K. L. Zankel & H. M. Colbert).
- K53 A New Variational Method for Ray Path Calculations.
(Ralph R. Goodman).
- K54 Acoustic Waveguide Mode Interference and Damping in Viscous Fluids.
(Richard A. Elco & William F. Hughes).
- K55 A Solid Resonant Device for Ultrasound Focusing.
(M. A. Issakovich & M. G. Sirotiyuk).
- K56 Mechanische und dielektrische Relaxationerscheinungen in Hochpolymeren bei Ultraschallfrequenzen.
(Jan Koppelman).

Section L: Noise Control

Noise problems in general, insulation in connection
with specific noise and vibration problems

- L11 The Accelerometer Pick-Up as a Diagnostic Tool in Noise Studies in Buildings.
(F. L. Ward).
- L12 Sources of Noise in Axial Flow Fans.
(E. J. Richards & I. J. Sharland).
- L13 Le bruit des moteurs électriques.
(P. Baron & M. Jacquemot).
- L14 Der Einfluss der Luftschalldämmung auf das Innengeräusch von Strassenfahrzeugen.
(Christian Betzhold).
- L15 Wie laut ist es in meinem Auto?
(G. Bobbert).
- L16 Beurteilung von Lärmbelästigungen durch Bezug auf den Störpegel.
(Friedrich Bruckmayer).
- L17 Effekt der Halslänge und der Kanalwandschallabsorption auf nichtlineare ungedämpfte Resonatoren.
(Y. N. Chen).
- L18 Noise Produced During Launchings of Rocket Powered Vehicles and Some Human Factor Siting Considerations.
(John N. Cole, Harald K. Hille, Robert G. Powell & Henning E. von Gierke).
- L19 Theoretical and Experimental Studies of Steep Fronted Waves in Pipes.
(P. O. A. L. Davies & M. J. Dwyer).
- L21 Discrete Frequency Noise from Ejector Nozzles.
(D. Middleton & E. J. Richards).
- L22 Technique de mesure du bruit des fusées.
(M. Kobrynski).
- L23 A Procedure for Noise Evaluation of Sound Power Data.
(W. E. Blazier, Jr. & R. J. Wells).
- L24 A Procedure for Computing the Subjective Reaction to Complex Noise.
(R. J. Wells & W. E. Blazier).
- L25 Characteristics of the Saturn Space Booster as a Noise Source.
(Wade D. Dorland).
- L26 Akustische Schaltungen unter Gleichströmung.
(Ewald Eichler).
- L27 Experimental Studies of Jet Turbulence and Their Relation to Jet Noise.
(P. O. A. L. Davies & M. J. Fisher).
- L28 Prediction of Noise from Motor Vehicles in Freely Flowing Traffic.
(W. J. Galloway & W. E. Clark).
- L31 Noise Characteristics of Coaxial Nozzles.
(P. Gregory & J. D. Voce).
- L33 Methods for Generation of High Intensity Sound.
(M. H. Hieken).
- L34 Vorausberechnung der aerodynamischen Geräusche elektrischer Maschinen.
(G. Hübner).
- L35 Quality Control by Noise Analysis.
(J. August Jensen & Holger Larsen).
- L36 On the Relation between the Exhaust Noise and the Mechanical Output Power of Some Combustion Engines.
(Ken'iti Kido, Noriyoshi Chubachi & Tadamoto Nimura).
- L37 Vibration and Noise Control by High Efficiency Viscoelastic Damping Materials.
(Francis Kirschner).
- L41 Anwendung von Sandwichblechen zur Lärmbekämpfung.
(Günther Kurtze).
- L42 Zur Deutung einiger typischer Frequenzanalysen von Fahrzeuginnen-geräuschen.
(Karl Kurz).
- L43 Die Anwendung elektronischer Rechenmaschinen bei Lärmbekämpfungsarbeiten.
(Anselm Lauber).
- L44 Die zulässigen Störpegel in den Studios.
(Dezsó Lázár).
- L45 The Correlation of Jet Noise Frequency Spectra.
(W. J. Lewis).
- L46 Etude sur Maquette de la Réduction du Bruit par l'interposition d'une Barrière.
(P. E. Magyar).
- L47 A Proposed Sound-Absorbing Device in the High Velocity Duct Systems.
(Masayuki Matsui & Kinya Nakamura).

- L48 FAA-Richtlinien der Flughafenrand-
bebauung und akustische Belastung.
(F. J. Meister).
- L51 Transmission of Sound in Ducts.
(C. L. Morfey).
- L52 The Blading of Fans in Its Influence
on Noise.
(Jaroslav Nemec).
- L53 Quietening a Cyclone Extractor to
Reduce Community Annoyance.
(A. F. B. Nickson).
- L54 Multi-Mount Isolation Systems.
(Alan O. Sykes).
- L55 Geräuschmessungen an den normalen und
geschweissten Schienen.
(Béla Széchéy).
- L56 Effect of Reverberation on Reaction
to Impact Noise.
(G. J. Thiegsen & K. Subbarao).
- L57 Experimental buildings for sound
insulation studies.
(O. Brandt & S. Wahlström).
- L58 Geräuschkontrolle und Lärmbekämpfungs-
massnahmen an Heizkesseln.
(Herbert Werner & Ulrich Winkler).

Section M: Room Acoustics

Sound absorption and insulation in general - Acoustic properties of rooms

- M11 On the Correlation of the Results of
Air Borne Sound Insulation Measurements
Recommended by ISO and a New Method
Based on the Research of van den Eijk.
(Paavo Arni & Juhani Borenus).
- M12 Testing small talks-studios with a
simple method intended for diffusion
measurements.
(Juhani Borenus).
- M13 Pulse Tests in Acoustic Models.
(J. P. A. Lochner & J. F. Burger).
- M14 Ein Verfahren zur Nachbildung von
Schallfeldern in Räumen und zur Unter-
suchung ihrer subjektiven Wirkungen.
(W. Burgdorf).
- M15 Acoustical Design of La Grande Salle,
A 3,000-Seat Multi-use Auditorium,
Montreal, Canada.
(Frederick Russell Johnson).
- M16 The Dependence of Reverberation Time
upon Seat Spacing.
(L. P. Delsasso).
- M21 Digital Computers in Room Acoustics.
(M. R. Schroeder, B. S. Atal & Carol
Bird).
- M22 Acoustical Design of the Quebec
Academy Auditorium, Quebec, Canada.
(Leslie L. Doelle & Oscar G. Vagi).
- M23 Zur Schalldämmung gelochter Blech-
platten.
(Peter Dämmig).
- M24 Sound Insulation Requirements in
Building Practice.
(Gunnar O. Jörgen).
- M25 Absorptionsmessungen für Eichung
eines kleinen Hallraumes.
(Marta Karsai & Thomas Tarnóczy).
- M26 Une méthode d'analyse acoustique
spatiale.
(Witold Straszewicz).
- M27 Acoustics of Music Rooms.
(Vern O. Knudsen).
- M28 Die Kopplung von Doppelwänden am Fun-
dament als Grenze ihrer Schalldämmung.
(W. Kuhl & W. Struve).
- M29 Schalldämmung von Fenstern und Türen
mit Fugen verschiedener Luftdurch-
lässigkeit.
(Judith Lang).
- M31 Ein Betonbunker wird Kongresshalle.
(Max Adam).
- M32 Reverberation Chamber Power Level
Measurements on Sound Sources.
(W. W. Lang & K. S. Nordby).
- M33 Breitbandabsorber mit hohen Absorp-
tionsgraden.
(E. Hirschwehr).
- M34 Die Schallabsorption von gelochten und
ungelochten Platten bei grossen Wand-
abständen.
(Günter Venzke).
- M35 Studies on flanking transmission in
an experimental building.
(O. Brandt & G. Westerberg).
- M36 Beeinflussung der Schalldämmung von
Wänden durch Resonatoren.
(Wolfgang Westphal).
- M37 Über den Einfluss der Deckenhöhe auf
die Klangqualität in Konzertsälen.
(Fritz Winckel).

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| <p>M41 Modellversuche zur Ermittlung des Einflusses von Schallspiegeln auf die Hörsamkeit.
(Ekkehart Krauth & Roland Bücklein).</p> <p>M42 Instantaneous Subjective Pre-Determination of Room Acoustics.
(Radamis Boutros-Attia).</p> <p>M43 Transient Sound Transmission Losses.
(Auguste C. Raes).</p> <p>M44 Prinzip und Anwendung einer neuartigen Wandverkleidung für reflexionsarme Räume.
(Peter Rother & Joachim Nutsch).</p> <p>M45 The New Acoustic Facilities at UCLA.
(R. W. Leonard, I. Rudnick & L. P. Delsasso).</p> <p>M46 Demonstration Box for Sound Insulation.
(W. K. R. Lippert & P. Dubout).</p> <p>M47 Influence of Acoustics on Design and Construction of Buildings in America Today.
(Robert B. Newman).</p> <p>M51 Acoustical Effects of Movable Sound</p> | <p>Reflectors in Auditoriums.
(Yoshifusa Funakoshi).</p> <p>M52 Measuring Methods for Distinctness in time and Distinctness in frequency in Studio Acoustics.
(J. J. Geluk).</p> <p>M53 A Method for the Investigation of Sound Diffusiveness in Rooms.
(G. A. Goldberg).</p> <p>M54 The "Sound Insulation" of Circular and Slit-shaped Apertures.
(M. C. Gomperts).</p> <p>M55 Considerations sur l'efficacité du traitement acoustique pour l'insonorisation des salles bruyantes.
(M. Grumazescu).</p> <p>M56 Graphic Solution for Acoustical Designing in Auditorium.
(Naoto Hida).</p> <p>M57 Geschlossenzelliger Weich-PVC-Schaumstoff als Luftschallabsorptionsmittel.
(Hermann Oberst).</p> <p>M58 The Use of Lead in Improving Sound Transmission Loss.
(Paul B. Ostergaard).</p> |
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Section N: Electroacoustics

Transducers, measuring methods in general

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| <p>N11 Magnetic Recording of Audio Signals at Low Tape Speed.
(E. de Niet, K. Teer & D. L. A. Tjaden).</p> <p>N12 A.F. Nonlinear Distortion Measurement by Wide Band Noise.
(Bjarne E. Bang).</p> <p>N13 Acoustic Probe for Intraocular Pressure Measurement.
(Wilfred Roth & Dale G. Blake).</p> <p>N14 Analyse et dépouillement automatique des réponses transitoires.
(P. Lienard).</p> <p>N15 Ein mechanischer Kettenleiter für Verzögerungszwecke.
(Georg Boerger & Lothar Cremer).</p> <p>N16 Power Handling Capacity of Loudspeakers.
(Cesarina Bordone Sacerdote).</p> <p>N17 On the Use of Warble Tone and Random Noise for Acoustic Measurement Purposes.
(Jens T. Broch).</p> <p>N18 Finite-Strain Response of the Piezo-</p> | <p>electric Transducer Ceramics Pb-Ba and Pb-Sr Zirconate-Titanate.
(C. M. van der Burgt & E. E. Havinga).</p> <p>N19 Die Nachbildung der Hörriechwirkung bei Lautstärkemessmikrofonen.
(H. Niese).</p> <p>N21 A Push-Pull Stereophonic Loudspeaker based on New Concepts in 2-channel Stereophony.
(F. H. Brittain).</p> <p>N22 Indication Limit.
(Edith L. R. Corliss).</p> <p>N23 High Power Ultrasonic Transducers Using Piezoelectric Ceramics.
(Alan E. Crawford).</p> <p>N24 On the Sensitivity of Condenser Microphones to a Non-Uniform Pressure Distribution on the Diaphragm.
(S. C. Dalgaard).</p> <p>N25 An Energy Detection Model for Monaural Auditory Detection.
(E. E. David, Jr., M. V. Mathews & Sheila M. Pfafflin).</p> |
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- N26 A New Determination of the Acoustical Impedance of Human Ears.
(M. E. Delany).
- N27 Contrôle des Lecteurs Stéréophoniques par Disques de Fréquence Glissante.
(D. J. Dion).
- N31 Gerät zur Anzeige des "subjektiven Spektrums" und der Lautheit von Dauergeräuschen.
(R. Fischer).
- N32 Attenuation Measurements on a Mobile Audiometric Unit.
(Frank Fowweather).
- N33 Die Erregung von Schwingungen mit einer grossen Schallintensität in Gasen mittels eines magnetostriktiven Schallgebers.
(B. G. Nowitzky & W. M. Friedmann).
- N34 Essais de mesures objectives de la fidélité de transmission d'un quadrupole acoustique par corrélation.
(Jean Guillermin).
- N35 The Effect on Stereophonic Reproduction of Frequency-Dependent Crosstalk Between Left and Right Channels.
(H. D. Harwood).
- N36 The Air Modulated Loudspeaker and Its Application to Acoustic Environmental Testing.
(John K. Hilliard, Walter T. Fiala & John J. Van Houten).
- N37 The Rational Design of Phonograph Pickups.
(F. V. Hunt).
- N38 Analyse des stereofonen Schallfeldes.
(András Illényi).
- N39 Die obere Frequenzgrenze bei der Kalibrierung piezoelektrischer Beschleunigungsaufnehmer mit elektrodynamischen Schwingtischen.
(Jan-Peter Hirschfeld).
- N41 Problems in Feedback Control of Narrow Band Random Noise.
(P. E. Møller Petersen).
- N42 Development of a Spheric Artificial Head for Acoustical Measurements of Telephone Instruments.
(Eero Lampio).
- N43 Akustisches Goniometer.
(G. A. Liaghati).
- N44 Effects of High Electromechanical Coupling on Characteristics of Piezoelectric Ceramic Transducers.
(Morio Onoe & Allen H. Meitzler).
- N45 Some Results on Using a Signal with a Continuous Spectrum for Distortion Measurements.
(S. Boel Pedersen).
- N46 Eine Methode zur Bestimmung des Querkontraktionskoeffizienten piezoelektrischer Keramiken.
(Ludwig Walther).
- N51 Miniature Pressure Microphones.
(Gunnar Rasmussen).
- N52 Qualitative Study of Transmission Frequency Response.
(Shuzo Saito & Ryōichi Matsuda).
- N53 Eine Apparatur zur ohrgemässen Tonhöhenanzeige.
(Ludwig Schreiber).
- N54 Non-Linear Effects in Quartz Resonators.
(A. Seed).
- N55 High-Quality Push-Pull Condenser Transmitters.
(G. M. Sessler & J. E. West).
- N56 Electromechanical Constants of Thick Barium Titanate Disks.
(Kimio Shibayama & Yoshimitsu Kikuchi).
- N57 Methods of Checking the RMS Properties of RMS Instruments.
(Carl Gustav Wahrman).
- N58 Production of High-Intensity Acoustic Vibrations by Means of Hydrodynamic Transducers.
(V. M. Fridman & B. G. Novitsky).

Section O: Physical Acoustics

General theoretical acoustics, radiation problems, non-linear acoustics etc.

- O11 On Interaction of Aerosol Particles in an Acoustic Field.
(O. K. Eknadlosyants).
- O12 Determination of Zones Subject to Meteorological Focusing.
(Richard N. Tedrick).
- O13 Beiträge zu dem Mechanismus des aktiven akustischen Feldes.
(P. Greguss).
- O14 Inhomogeneous Elastic Media with Constant Velocity.
(J. E. White).