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Volume 1 of 2

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E-Brief Sessions

EB-08 Applications in Audio Saturday, Oct. 19
3:30 pm – 4:30 pm
Room 1E11

Session EB1 RECORDING AND PRODUCTION

Friday, Oct. 18, 9:00 am – 10:00 am

Room 1E11

Chair: **Tomasz Zernicki**, Zylia sp. z o.o., Poznan, Poland

9:00 am

EB1-1 Recording and Mixing of Classical Music Using Non-Adjacent Spherical Microphone Arrays and Audio Source Separation Algorithms—*Eduardo Patricio, Mateusz Skrok, Tomasz Zernicki*, Zylia sp. z o.o., Poznan, Poland

Engineering Brief 525

9:15 am

EB1-2 Exploring Preference for Multitrack Mixes Using Statistical Analysis of MIR and Textual Features—*Joseph Colonel, Joshua D. Reiss*, Queen Mary University of London, London, UK

Engineering Brief 526

9:30 am

EB1-3 Machine Learning Multitrack Gain Mixing of Drums—*Dave Moffat, Mark Sandler*, Queen Mary University of London, London, UK

Engineering Brief 527

9:45 am

EB1-4 Why Microphone Arrays Are Not Better than Single-Diaphragm Microphones with Regard to Their Single Channel Output Quality—*Helmut Wittek, Hannes Dieterle*, SCHOEPS Mikrofone GmbH, Karlsruhe, Germany

[Presentation only; not in E-Library]

10:00 am

EB1-4 Predicting Objective Difficulty in Peak Identification Task of Technical Ear Training—*Atsushi Marui, Toru Kamekawa*, Tokyo University of the Arts, Adachi, Tokyo, Japan

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E-Brief Sessions

Session EB2 – POSTERS: APPLICATIONS IN AUDIO

Friday, Oct. 18, 9:00 am – 10:30 am

South Concourse A

9:00 am

EB2-1 Personal Audio Systems in Car Cabin Using Loudspeaker Array Based on Measured Transfer Functions with Spectral Smoothing—

Yefeng Cai,^{1,2} Chao Ye,^{1,2} Dengyong Ma,^{1,2} Yongsheng Mu,^{1,2} Jianming Zhou,² Guoqiang Chai²

¹ Colsonic Electronics Co., Ltd., Suzhou, China

² Suzhou Sonavox Electronics Co.,Ltd., Suzhou, China

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9:00 am

EB2-2 A Latency Measurement Method for Networked Music Performances—

Robert Hupke,¹ Sripathi Sridhar,² Andrea Genovese,² Marcel Nophut,¹ Stephan Preihs,¹ Tom Beyer,² Agnieszka Roginska,² Jürgen Peissig¹

¹ Leibniz Universität Hannover, Hannover, Germany

² New York University, New York, NY, USA

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9:00 am

EB2-3 An Investigation into the Effectiveness of Room Adaptation Systems: Listening Test Results—

Pei Yu, Ziyun Liu, Shufeng Zhang, Yong Shen, Nanjing University, Nanjing, Jiangsu Province, China

Engineering Brief 530

9:00 am

EB2-4 Evaluating Four Variants of Sine Sweep Techniques for Their Resilience to Noise in Room Acoustic Measurements—

Eric Segerstrom,¹ Ming-Lun Lee,² Steve Philbert²

¹ Rensselaer Polytechnic Institute, Troy, NY, USA

² University of Rochester, Rochester, NY, USA

Engineering Brief 531

9:00 am

EB2-5 Perceptually Affecting Electrical Properties of Headphone Cable—Factor Hunting Approach—

Akihiko Yoneya, Nagoya Institute of Technology, Nagoya, Aichi-pref., Japan

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9:00 am

EB2-6 An Investigation into the Location and Number of Microphone Measurements Necessary for Efficient Active Control of Low-Frequency Sound Fields in Listening

E-Brief Sessions

Rooms—*Tom Bell,^{1,2} Filippo Maria Fazi²*

¹ Bowers & Wilkins, Southwater, West Sussex, UK

² University of Southampton, Southampton,
Hampshire, UK

Presentation only; not in E-Library

9:00 am

EB2-7 Measuring Speech Intelligibility Using Head-Oriented Binaural Room Impulse Responses—*Allison Lam,¹ Ming-Lun Lee,² Steve Philbert²*

¹ Tufts University, Medford, MA, USA

² University of Rochester, Rochester, NY, USA

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9:00 am

EB2-8 Compensation Filters for Excess Exciter Excursion on Flat-Panel Loudspeakers—*David Anderson*, University of Pittsburgh, Pittsburgh, PA, USA

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Session EB3 - POSTERS—SPATIAL AUDIO

Friday, Oct. 18, 11:00 am – 12:30 pm

South Concourse A

11:00 am

EB3-1 Comparing Externalization Between the Neumann KU100 Versus Low Cost DIY Binaural Dummy Head—*Kelley DiPasquale*, SUNY Potsdam, Potsdam, NY, USA

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11:00 am

EB3-2 SALTE Pt. 1: A Virtual Reality Tool for Streamlined and Standardized Spatial Audio Listening Tests—*Daniel Johnston, Benjamin Tsui, Gavin Kearney*, University of York, York, UK

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11:00 am

EB3-3 SALTE Pt. 2: On the Design of the SALTE Audio Rendering Engine for Spatial Audio Listening Tests in VR—*Tomasz Rudzki, Chris Earnshaw, Damian Murphy, Gavin Kearney*, University of York, York, UK

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11:00 am

EB3-4 Mixed Reality Collaborative Music—*Andrea Genovese*,

E-Brief Sessions

Marta Gospodarek, Agnieszka Roginska, New York University, New York, NY, USA

Presentation only; not in E-Library

11:00 am

EB3-5 Calibration of a Reconfigurable Multichannel Loudspeaker System with an Ambisonic Microphone—*Steve Philbert, Ming-Lun Lee, Mark F. Bocko, University of Rochester, Rochester, NY, USA*

Presentation only; not in E-Library

11:00 am

EB3-6 Field Report: Immersive Recording of a Wind Ensemble Using Height Channels and Delay Compensation for a Realistic Playback Experience—*Hyunjoung Yang, Alexander Dobson, Richard King, McGill University, Montreal, Quebec, Canada; The Centre for Interdisciplinary Research in Music Media and Technology, Montreal, Quebec, Canada*

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Session EB4 - POSTERS: RECORDING AND PRODUCTION

Friday, Oct. 18, 3:30 pm – 5:00 pm

South Concourse A

3:30 pm

EB4-1 A Comparative Pilot Study and Analysis of Audio Mixing Using Logic Pro X and GarageBand for IOS—*Jiaque Cecilia Wu,¹ Orchisama Das,² Vincent DiPasquale¹*

¹ University of Colorado Denver, Denver, CO, USA

² Center for Computer Research in Music and Acoustics (CRMA), Stanford University, Stanford, CA, USA

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3:30 pm

EB4-2 The ANU School of Music Post-Production Suites: Design, Technology, Research, and Pedagogy—*Samantha Bennett, Matt Barnes, Australian National University, Canberra, Australia*

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3:30 pm

EB4-3 A Case Study of Cultural Influences on Mixing Preference—Targeting Japanese Acoustic Major Students—*Toshiki Tajima, Kazuhiko Kawahara, Kyushu University, Fukuoka, Japan*

Engineering Brief 541

E-Brief Sessions

3:30 pm

EB4-4 A Dataset of High-Quality Object-Based Productions—
*Giacomo Costantini,¹ Andreas Franck,¹ Chris Pike,² Jon
Francombe,² James Woodcock,³ Richard J. Hughes,³ Philip
Coleman,⁴ Eloise Whitmore,⁵ Filippo Maria Fazi¹*

¹ University of Southampton, Southampton, UK

² BBC Research and Development, Salford, UK

³ University of Salford, Salford, UK

⁴ University of Surrey, Guildford, Surrey, UK

⁵ Naked Productions, Manchester, UK

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3:30 pm

**EB4-5 An Open-Access Database of 3D Microphone Array
Recordings—***Hyunkook Lee, Dale Johnson, University
of Huddersfield, Huddersfield, UK*

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Session EB5 - TRANSDUCERS

Saturday, Oct. 19, 9:00 am – 11:30 am

Room 1E11

Chair: **Alexander Voishvillo**, JBL/Harman Professional
Solutions, Northridge, CA, USA

9:00 am

**EB5-1 The Application of Graphene Oxide-Based Loudspeaker
Membranes in 40mm Headphone Drivers—***William
Cardenas, Robert-Eric Gaskell, ORA Graphine Audio Inc.,
Montreal, Quebec, Canada*

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9:15 am

**EB5-2 MEMS Loudspeakers - A New Chip-Based Technology for
Ultra-Small Speakers—***Fabian Stoppel,¹ Florian Niekiet,¹
Andreas Männchen,² Daniel Beer,² Bernhard Wagner¹*

¹ Fraunhofer Institute for Silicon Technology ISIT,
Itzehoe, Germany;

² Fraunhofer Institute for Digital Media Technology
IDMT, Ilmenau, Germany

[Presentation only; not in E-Library]

9:30 am

**EB5-3 A Case Study on a Dynamic Driver: How Electromagnet
Can Improve the Performance of a Micro Speaker—***Md
Mehedi, Carpenter Technology Corporation, Philadelphia,
PA, USA*

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E-Brief Sessions

9:45 am

EB5-4 Alignment of Triple Chamber Eighth-Order Band-Pass Loudspeaker Systems—*Hao Dong, Yong Shen, Rui Chen*, Nanjing University, Nanjing, China

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10:00 am

EB5-5 Analysis of a Vented-Box Loudspeaker System via the Impedance Function—*James Lazar, Glenn S. Kubota*, Samsung Research America, Valencia, CA, USA

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10:15 am

EB5-6 Designing Listening Tests of SR/PA Systems, A Case Study—*Eddy Bøgh Brixen*, EBB-consult, Smørum, Denmark; DPA Microphones, Allerød, Denmark

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10:30

EB5-7 Noise and Distortion Mechanisms Encountered in Switching Audio Power Amplifier Design—*Robert Muniz*, Harmonic Power Conversion LLC, Douglas, MA, USA

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10:45 am

EB5-8 Acoustic Metamaterial in Loudspeaker Systems Design—*Letizia Chisari, Mario Di Cola, Paolo Martignon*, Contralto Audio srl, Parma (PR), Italy

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11:00 am

EB5-9 Application of Matrix Analysis for Derivation of Acoustical Impedance of Horns—*Alexander Voishvillo, Balázs Kákonyi, Brian McLaughlin*, Harman Professional Solutions, Northridge, CA, USA

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11:15 am

EB5-10 Application of Modulated Musical Multitone Signal for Evaluation of Horn Driver Sound Quality—*Alexander Voishvillo, Balázs Kákonyi, Brian McLaughlin*, Harman Professional Solutions, Northridge, CA, USA

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E-Brief Sessions

Session EB6 - SPATIAL AUDIO

Saturday, Oct. 19, 2:00 pm – 3:00 pm

Room 1E11

Chair: **Filippo Maria Fazi**, University of Southampton,
Southampton, Hampshire, UK

2:00 pm

EB6-1 Study of the Effect of Tikhonov Regularization on the Low Frequency Performance of Cross-Talk Cancellation Systems—*Filippo Maria Fazi, Eric Hamdan, Marcos Simón, Andreas Franck*, University of Southampton, Southampton, Hampshire, UK

[Presentation only; not available in E-Library]

2:15 pm

EB6-2 Subjective Comparison of Binaural Audio Rendering through Headphones and CTC—*Jonathan Phillips, Marcos Simón*, University of Southampton, Southampton, UK

[Presentation only; not available in E-Library]

2:30 pm

EB6-3 Tetra-Speaker: Continual Evaluation of the Immersive Experience of a Single-Point Reproduction System—*Parichat Songmuang*, New York University, New York, NY, USA

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2:45 pm

EB6-4 Tetrahedral Microphones: An Effective A/B Main System—*Alexander Dobson, Wieslaw Woszczyk*, McGill University, Montreal, QC, Canada

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Session EB7 - AUDIO SIGNAL PROCESSING

Saturday, Oct. 19, 2:30 pm – 4:15 pm

Room 1E10

Chair: **Dave Moffat**, Queen Mary University London,
London, UK

2:30 pm

EB7-1 Realistic Procedural Sound Synthesis of Bird Song Using Particle Swarm Optimization—*Jorge Zúñiga, Joshua D. Reiss*, Queen Mary University of London, London, UK

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E-Brief Sessions

2:45 pm

EB7-2 Multi-Scale Auralization for Multimedia Analytical Feature Interaction—*Nguyen Le Thanh Nguyen,¹ Hyunhwan Lee,¹ Joseph Johnson,¹ Mitsunori Ogihara,¹ Gang Ren,¹ James Beauchamp²*

¹ University of Miami, Coral Gables, FL, USA

² University of Illinois at Urbana-Champaign, Urbana, IL, USA

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3:00 pm

EB7-3 Perceptually Motivated Hearing Loss Simulation for Audio Mixing Reference—*Angeliki Mourgela,¹ Trevor Agus,² Joshua D. Reiss¹*

¹ Queen Mary University of London, London, UK

² Queens University Belfast, Belfast, UK

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3:15 pm

EB7-4 Modeling between Partial Components for Musical Timbre Imitation and Migration—*Angela C. Kihiko,¹ Mitsunori Ogihara,² Gang Ren,² James Beauchamp³*

¹ Spelman College, Atlanta, GA, USA

² University of Miami, Coral Gables, FL, USA

³ University of Illinois at Urbana-Champaign, Urbana, IL, USA

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3:30 pm

EB7-5 Coherence as an Indicator of Distortion for Wide-Band Audio Signals such as M-Noise and Music—*Merlijn van Veen, Roger Schwenke*, Meyer Sound Laboratories, Berkeley, CA, USA

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3:45 pm

EB7-6 Fast Time Domain Stereo Audio Source Separation Using Fractional Delay Filters—*Oleg Golokolenkao, Gerald Schuller*, Ilmenau University of Technology, Ilmenau, Germany

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4:00 pm

EB7-7 Line Array Optimization through Innovative Multichannel Filtering—*Paolo Martignon, Mario Di Cola, Letizia Chisari*, Contralto Audio srl, Casoli, Italy

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E-Brief Sessions

Session EB8 - APPLICATIONS IN AUDIO

Saturday, Oct. 19, 3:30 pm – 4:30 pm

Room 1E11

Chair: **Sunil G. Bharitkar**, HP Labs., Inc., San Francisco,
CA, USA

3:30 pm

EB8-1 Vibrary: A Consumer-Trainable Music Tagging Utility
—*Scott Hawley*,¹ *Jason Bagley*,² *Brett Porter*,² *Daisey Traynham*²

¹ Belmont University, Nashville, TN, USA

² Art+Logic, Pasadena, CA, USA

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3:45 pm

EB8-2 Casualty Accessible and Enhanced (A&E) Audio: Trialling Object-Based Accessible TV Audio—*Lauren Ward*,^{1,2} *Matthew Paradis*,³ *Ben Shirley*,¹ *Laura Russon*,⁴ *Robin Moore*,² *Rhys Davies*⁴

¹ University of Salford, Salford, UK

² BBC R&D, North Lab, Salford, UK

³ BBC R&D, South Lab, London, UK

⁴ BBC Studios, Cardiff, Wales, UK

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4:00 pm

EB8-3 Generative Modeling of Metadata for Machine Learning Based Audio Content Classification—*Sunil G. Bharitkar*,
HP Labs., Inc., San Francisco, CA, USA

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4:15 pm

EB8-4 Individual Headphone Equalization at the Eardrum with New Apps for Computers and Cellphones—*David Griesinger*, David Griesinger Acoustics, Cambridge, MA, USA

[Presentation only; not available in E-Library]

Electronic Instrument Design

ELECTRONIC DANCE MUSIC

EDM-01	Mixing EDM Masterclass	Thursday, Oct. 17 2:00 pm – 3:00 pm Room 1E12
EDM-02	Art & Origins of Sampling	Thursday, Oct. 17 3:15 pm – 4:15 pm Room 1E12
EDM-03	Remixing—Breaking the Illusion	Thursday, Oct. 17 4:30 pm – 5:30 pm Room 1E12

EDM01 - MIXING EDM MASTERCLASS **Thursday, October 17, 2:00 pm – 3:00 pm** **Room 1E12**

Presenter: Ariel Borujow, Westward Music Group Inc.

EDM02 - THE ART & ORIGINS OF SAMPLING: FROM VINYL TO DAW; FROM HIP-HOP TO DANCE MUSIC **Thursday, October 17, 3:15 pm – 4:15 pm** **Room 1E12**

Moderator: Nate Mars, Electronic Music Collective

EDM03 - REMIXING—BREAKING THE ILLUSION **Thursday, October 17, 4:30 pm – 5:30 pm** **Room 1E12**

Presenter: Rick Snoman, Dance Music Productio,
Manchester, UK

ELECTRONIC INSTRUMENT DESIGN & APPLICATIONS

EI-01	Drum Machines, Groove Boxes, Etc.	Thursday, Oct. 17 9:00 am – 10:00 am Room 1E17
EI-02	Not Your Everyday Filters	Thursday, Oct. 17 10:15 am – 11:15 am Room 1E17

Electronic Instrument Design

EI-03	Modular Synthesizer Designs	Thursday, Oct. 17 2:15 pm –3:45 pm Room 1E17
EI-04	Embedded Computing and Instrument Design	Thursday, Oct. 17 4:00 pm –5:30 pm Room 1E17

EI01 - DRUM MACHINES, GROOVE-BOXES, AND TEMPO-BASED ELECTRONIC INSTRUMENTS

Thursday, October 17, 9:00 am – 10:00 am

Room 1E17

Presenters: **Michael Bierylo**, Berklee College of Music, Brookline, MA, USA
Dave Rossum

EI02 - NOT YOUR EVERYDAY FILTERS

Thursday, October 17, 10:15 am – 11:45 am

Room 1E17

Presenter: **Jayant Datta**, Audio Precision, Beaverton, OR, USA

This session is presented in association with the AES Technical Committee on Signal Processing

EI03 - MODULAR SYNTHESIZER DESIGNS - FROM THE PAST TO FUTURE DIRECTIONS

Thursday, October 17, 2:15 pm – 3:45 pm

Room 1E17

Moderator: **Michael Bierylo**, Berklee College of Music, Brookline, MA, USA

Panelists: *Andrew Ikenberry*
Dave Rossum

EI04 - EMBEDDED COMPUTING AND INSTRUMENT DESIGN

Thursday, October 17, 4:00 pm – 5:30 pm

Room 1E17

Moderator: **Paul Lehrman**, Tufts University, Medford, MA, USA

Panelists: *Richard Graham*
Andrew Ikenberry
Denis Labrecque
Teresa Marrin Nakra
Dave Rossum

GAME AUDIO & XR

GA-01	4-pi Reverb Effects for In-Game Sounds	Wednesday, Oct. 16 9:00 am – 10:30 am Room 1E06
GA-02	Abbey Road Spatial Audio Forum	Wednesday, Oct. 16 9:15 am – 10:45 am Room 1E08
GA-03	Interactive AR Audio Using Spark	Wednesday, Oct. 16 10:45 am – 11:45 am Room 1E13
GA-04	Real-Time Mixing and Monitoring Practices	Wednesday, Oct. 16 1:30 pm – 2:30 pm Room 1E13
GA-05	Spatial Storytelling in Games	Wednesday, Oct. 16 2:45 pm – 4:15 pm Room 1E08
GA-06	Simulating Real World Acoustic Phenomena	Wednesday, Oct. 16 4:30 pm – 5:30 pm Room 1E08
GA-07	MPEG-H 3D Audio Goes VR	Thursday, Oct. 17 9:00 am – 10:30 am Room 1E21
GA-08	Intro to Machine Learning for Game Audio	Thursday, Oct. 17 10:15 am – 11:45 am Room 1E08
GA-09	Audio Productivity in Mixed Reality	Thursday, Oct. 17 1:15 pm – 2:15 pm Room 1E13
GA-10	Lessons Learned in Game Audio	Thursday, Oct. 17 2:15 pm – 3:15 pm Room 1E13
GA-11	Microtalks	Thursday, Oct. 17 3:30 pm – 4:30 pm Room 1E13
GA-12	Not Playing Games with Your Business	Friday, Oct. 18 9:00 am – 10:30 am Room 1E13
GA-13	Borderlands 3— Wild West of Atmos	Friday, Oct. 18 10:30 am – 12:00 noon Room 1E06
GA-14	Just Cause 4 OST: Creative Collaboration	Friday, Oct. 18 1:30 pm – 2:30 pm Room 1E17
GA-15	Binaural Audio—Just a 360/VR Geek Thing?	Saturday, Oct. 20 1:30 pm – 3:00 pm Room 1E08

Game Audio & XR

GA01 - 4-Pi REVERB EFFECTS FOR IN-GAME SOUNDS

Wednesday, October 16, 9:00 am – 10:30 am

Room 1E06

Presenters: **Tomoya Kishi**, CAPCOM Co., Ltd., Japan
Steve Martz, THX Ltd., San Rafael, CA, USA
Masataka Nakahara, ONFUTURE Ltd., Tokyo, Japan;
SONA Corp., Tokyo, Japan
Kazutaka Someya, beBlue Co., Ltd., Tokyo, Japan

This session is presented in association with the AES Technical Committee on Audio for Games and AES Technical Committee on Spatial Audio

GA02 - ABBEY ROAD SPATIAL AUDIO FORUM— MUSIC PRODUCTION IN VR AND AR

Wednesday, October 16, 9:15 am – 10:45 am

Room 1E08

Chair: **Gavin Kearney**, University of York, York, UK

Panelists: *Stephen Barton*, Afterlight Inc.
Axel Drioli, Philharmonia Orchestra, London, UK
Oliver Kadel, 1.618 Digital, London, UK; University
of West London, London, UK
Muki Kulhan, Muki International, UK
Hyunkook Lee, University of Huddersfield,
Huddersfield, UK
Mirek Stiles, Abbey Road Studios, London, UK

This session is presented in association with the AES Technical Committee on Audio for Games

GA03 - INTERACTIVE AR AUDIO USING SPARK

Wednesday, October 16, 10:45 am – 11:45 am

Room 1E13

Moderator: **Dren McDonald**, Facebook

Panelists: *Kristi Boeckmann*
Matt Nichols, Facebook
Grey Robbins, Facebook

This session is presented in association with the AES Technical Committee on Audio for Games

GA04 - REAL-TIME MIXING AND MONITORING BEST PRACTICES FOR VIRTUAL, MIXED, AND AUGMENTED REALITY

Wednesday, October 16, 1:30 pm – 2:30 pm

Room 1E13

Game Audio & XRs

Moderator: **Scott Selfon**, Audio Experiences Lead, Facebook
Reality Labs (Oculus Research)

This session is presented in association with the AES Technical Committee on Audio for Games

GA05 - SPATIAL STORYTELLING IN GAMES

Wednesday, October 16, 2:45 pm – 4:15 pm

Room 1E08

Moderator: **Rob Bridgett**, Eidos Montreal, Montreal, Canada

Panelists: *Jason Kanter*, Audio Director, Avalanche Studios,
New York, NY, USA
Phillip Kovats, WWS Sound, Sony Interactive
Entertainment
Mark Petty, Gearbox Software

GA06 - SIMULATING REAL WORLD ACOUSTIC PHENOMENA: FROM GRAPHICS TO AUDIO

Wednesday, October 16, 4:30 pm – 5:30 pm

Room 1E08

Presenter: **Christophe Tornieri**, Audiokinetic

This session is presented in association with the AES Technical Committee on Audio for Games and AES Technical Committee on Spatial Audio

GA07 - MPEG-H 3D AUDIO GOES VR

Thursday, October 17, 9:00 am – 10:30 am

Room 1E21

Chair: **Jürgen Herre**, International Audio Laboratories
Erlangen, Erlangen, Germany; Fraunhofer IIS,
Erlangen, Germany

Panelists: *Adrian Murtaza*, Fraunhofer Institute for Integrated
Circuits IIS, Erlangen, Germany
Nils Peters, Qualcomm, Advanced Tech R&D,
San Diego, CA, USA

This session is presented in association with the AES Technical Committee on Coding of Audio Signals

GA08 - INTRODUCTION TO MACHINE LEARNING FOR GAME AUDIO

Thursday, October 17, 10:15 am – 11:45 am

Room 1E08

Presenter: **John Byrd**, Gigantic Software, Santa Ana, CA, USA

This session is presented in association with the AES Technical Committee on Audio for Games

Game Audio & XR

GA09 - AUDIO PRODUCTIVITY IN MIXED REALITY

Thursday, October 17, 1:15 pm – 2:15 pm

Room 1E13

Presenters: **Sally Kellaway**, Microsoft, Seattle, WA, USA
Joe Kelly, Microsoft, Seattle, WA, USA

This session is presented in association with the AES Technical Committee on Audio for Games

GA10 - LESSONS LEARNED IN GAME AUDIO

Thursday, October 17, 2:15 pm – 3:15 pm

Room 1E13

Presenter: **Alex Wilmer**, Wilmer Sound, San Francisco, CA, USA
Sae Wilmer, Wilmer Sound, San Francisco, CA, USA

GA11 - Micro Talks

Thursday, October 17, 3:30 pm – 4:30 pm

Room 1E13

Presenters: **Sally Kellaway**, Microsoft, Seattle, WA, USA
Steve Martz, THX Ltd., San Rafael, CA, USA

This session is presented in association with the AES Technical Committee on Audio for Games

GA12 - NOT PLAYING GAMES WITH YOUR BUSINESS

Friday, October 18, 9:00 am – 10:30 am

Room 1E13

Chair: **Alex Wilmer**, Wilmer Sound, San Francisco, CA, USA

Panelists: *Jason Kanter*, Audio Director, Avalanche Studios
Adam Levensen, Sr. Dir. of Business Development
& Marketing, Waves Audio
Michael Sinterniklaas, President, NYAV Post

GA13 - BORDERLANDS 3—THE WILD WEST OF ATMOS

Friday, October 18, 10:30 am – 12:00 noon

Room 1E06

Presenters: **Brian Fieser**, Gearbox Software
Julian Kwasneski, Bay Area Sound
Mark Petty, Gearbox Software
William Storkson, Bay Area Sound

This session is presented in association with the AES Technical Committee on Audio for Games

GA14 - JUST CAUSE 4 OST: CREATIVE COLLABORATION

Friday, October 18, 1:30 pm – 2:30 pm

Room 1E17

Hip-Hop and R&B

Presenter: **Zach Abramson**, YouTooCanWoo

This session is presented in association with the AES Technical Committee on Audio for Games

GA15 - BINAURAL AUDIO - JUST A 360/VR GEEK THING OR FUTURE AUDIO ENTERTAINMENT?

Saturday, October 19, 1:30 pm – 3:00m

Room 1E08

Chair: **Tom Ammermann**, New Audio Technology GmbH,
Hamburg, Germany

Panelists: *David Miles Huber*, Seattle, WA, USA
Andres A. Mayo, Andres Mayo Mastering & Audio Post,
Buenos Aires, Argentina
Agnieszka Roginska, New York University, New York,
NY, USA
Thilo Schaller, SUNY Buffalo, Buffalo, NY, USA

HIP-HOP AND R&B

HH-01	Chopped and Looped (An AES Special Event)	Thursday, Oct. 17 9:30 am – 11:00 pm Room 1E15+16
HH-02	The Soul of an R&B Mix	Friday, Oct. 18 2:30 pm – 3:30 pm Room 1E12
HH-03	Studio Design for Hip-Hop and R&B	Friday, Oct. 18 3:30 pm – 4:30 pm Room 1E12
HH-04	Engineering for The Abstract	Friday, Oct. 18 4:30 pm – 5:30 pm Room 1E12

HH01 - CHOPPED AND LOOPED—INSIDE THE ART OF SAMPLING FOR HIP-HOP (AN AES SPECIAL EVENT)

Thursday, October 17, 9:30 am – 11:00 am

Room 1E15+16

Moderator: **Paul “Willie Green” Womack**, Willie Green Music,
Brooklyn, NY, USA

Panelists: *Just Blaze*, Jay-Z, Kanye West
Breakbeat Lou, Ultimate Breaks and Beats
Hank Shocklee, Shocklee Entertainment, New York,
NY, USA

Hip-Hop and R&B

Ebonie Smith, Atlantic Records/Hamilton Cast Album

HH02 - THE SOUL OF AN R&B MIXS

Friday, October 18, 2:30 pm – 3:30 pm

Room 1E12

Moderator: **Paul “Willie Green” Womack**, Willie Green Music,
Brooklyn, NY, USA

Panelists: *Prince Charles Alexander*, Berklee College of Music,
Boston, MA, USA
Neal Pogue, Neal H Pogue, Atlanta, GA, USA

HH03 - STUDIO DESIGN FOR HIP-HOP AND R&B

Friday, October 18, 3:30 pm – 4:30 pm

Room 1E12

Moderators: **David Malekpour**, Professional Audio Design, Inc.
Paul “Willie Green” Womack, Willie Green Music,
Brooklyn, NY, USA

Panelists: *Larrance Dopson*
James Fauntleroy
Frank Hendler
Rick St. Hilaire

HH04 - ENGINEERING FOR THE ABSTRACT: RECORDING

Q-TIP AND A TRIBE CALLED QUEST

Friday, October 18, 4:30 pm – 5:30 pm

Room 1E12

Presenter: **Gloria Kaba**, Little Underground

HISTORICAL SESSIONS

H-01	Integrating History into Modern Curriculum	Wednesday, Oct. 16 9:15 am – 10:15 am Room 1E12
H-02	Building Success through Your Team	Wednesday, Oct. 16 5:00 pm – 6:00 pm Room 1E21
H-03	Rudy Van Gelder: A Legacy	Thursday, Oct. 17 1:15 pm – 2:45 pm Room 1E08
H-04	Spike Jones: Proposterous Precision	Thursday, Oct. 17 2:45 pm – 4:15 pm Room 1E08

Historical Sessions

H-05	Tom Dowd Film	Thursday, Oct. 17 5:30 pm – 7:00 pm Dolby Theater
H-06	African Americans in Audio (An AES Special Event)	Friday, Oct. 18 9:30 am – 11:00 am Room 1E15+16
H-07	Compression Driver DNA	Friday, Oct. 18 11:15 am – 12:15 pm Room 1E10

H01 - INTEGRATING HISTORY INTO THE MODERN AUDIO CURRICULUM

Wednesday, October 16, 9:15 am – 10:15 am

Room 1E12

Chair: **Scott Burgess**, University of Colorado Denver,
Denver, CO, USA

Panelists: *Gabe Herman*, The University of Hartford, The Hartt
School, Hartford, CT, USA
Susan Schmidt Horning, St. John's University
Jessica Thompson, Jessica Thompson Audio,
Berkeley, CA, USA

H02 - BUILDING SUCCESS THROUGH YOUR TEAM—VIEWS FROM THE FIRST WOMAN BROADCAST ENGINEER

Wednesday, October 16, 5:00 pm – 6:00 pm

Room 1E21

Presenter: **Pamela Gibson**

H03 - RUDY VAN GELDER: A LEGACY IN AUDIO ENGINEERING

Thursday, October 17, 1:15 pm – 2:45 pm

Room 1E08

Presenters: **Richard Capeless**, Deep Groove Mono, New York,
NY, USA
Michael Cuscuna, Mosaic Records
Don Sickler, Second Floor Music
Maureen Sickler, Second Floor Music

H04 - SPIKE JONES: PREPOSTEROUS PRECISION

Thursday, October 17, 2:45 pm – 4:15 pm

Room 1E08

Chair: **Mike Wisland**, Utah Valley University, Orem, UT, USA

Panelists: *Arlen Card*, Utah Valley University, Orem, UT, USA
Skip Craig

Historical Sessions

Leslie Ann Jones, Recording Engineer and Producer,
Director of Music Recording and Scoring, Skywalker
Sound, San Rafael, CA, USA
Emily Taggart

H05 - LIMITED ENGAGEMENT SCREENING, TOM DOWD AND THE LANGUAGE OF MUSIC

Thursday, October 18, 5:30 pm – 7:00 pm
Dolby Theater, 1350 Ave. of the Americas

H06 - AFRICAN AMERICANS IN AUDIO (AN AES SPECIAL EVENT)

Friday, October 18, 9:30 am — 11:00 am
Room 1E15+16

Moderator: **Leslie Gaston-Bird**, Mix Messiah Productions,
Brighton, UK; Institute of Contemporary Music
Performance, London, UK

Panelists: *Prince Charles Alexander*, Berklee College of Music,
Boston, MA, USA
Abhita Austin, Audio Engineer-Producer and Founder
of The Creator's Suite
James Henry, recording engineer/producer
and audio educator
Ebonie Smith, Atlantic Records/Hamilton Cast Album
Paul "Willie Green" Womack, Willie Green Music,
Brooklyn, NY, USA
Bobby Wright, Hampton University

H07 - COMPRESSION DRIVER DNA: THE ORIGIN AND SEEDS OF PROGRESS

Friday, October 18, 11:15 am – 12:15 pm
Room 1E10

Presenters: **Thomas Dunker**
Bjørn Kolbrek, Celestion, Ipswich, UK

IMMERSIVE & SPATIAL AUDIO

**IS-01 Music Production in
Immersive Formats**

Wednesday, Oct. 16
10:45 am – 12:00 noon
Room 1E06

Immersive & Spatial Audio

IS-02	Reproduction and Evaluation	Wednesday, Oct. 16 4:15 pm – 5:45 pm Room 1E17
IS-03	ISSP	Thursday, Oct. 17 10:15 am – 11:15 am Room 1E06
IS-04	3D Audio Philosophies for Commercial Music	Thursday, Oct. 17 4:30 pm – 5:30 pm Room 1E08
IS-05	Building Listening Tests in VR	Friday, Oct. 18 9:00 am – 10:00 am Room 1E08
IS-06	6DoF Case Studies	Friday, Oct. 17 2:15 pm – 3:15 pm Room 1E08
IS-07	6DoF Sound Capture and Playback	Friday, Oct. 17 3:30 pm – 4:30 pm Room 1E08
IS-08	Ambisonics Tools: Session 1	Saturday, Oct. 19 9:00 am – 12:00 noon Room 1E13
IS-09	Producing Hi-Quality 360/3D VR Videos	Saturday, Oct. 19 9:00 am – 10:30 am Room 1E08
IS-10	Music Production for Dolby Atmos	Saturday, Oct. 19 11:30 am – 12:30 pm Room 1E06

**IS01 - ISSP: IMMERSIVE SOUND SYSTEM PANNING.
AN INTERACTIVE SOFTWARE APPLICATION AND TOOLS
FOR LIVE PERFORMANCES**
Wednesday, October 16, 10:30 am – 12:00 noon
Room 1E06

Presenter: **Ianina Canalis**, National University of Lanús,
Buenos Aires, Argentina

**IS02 - MUSIC PRODUCTION IN IMMERSIVE FORMATS:
ALTERNATIVE PERSPECTIVES**
Wednesday, October 16, 10:45 am – 12:00 noon
Room 1E17

Presenters: **Thomas Aichinger**, scopeaudio, Austria
Zachary Bresler, University of Agder, Kristiansand S,
Vest-Agder, Norway
Eve Klein, University of Queensland, Brisbane,
Queensland, Australia
Jo Lord, University of West London, London, UK

Immersive & Spatial Audio

IS03 - REPRODUCTION AND EVALUATION OF SPATIAL AUDIO THROUGH SPEAKERS

Wednesday, October 16, 4:15 pm – 5:45 pm

Room 1E06

Presenters: **Juan Simon Calle Benitez**, THX Ltd., San Francisco, CA, USA
Patrick Flangan, THX Ltd.
Gavin Kearney, University of York, York, UK
Nils Peters, Qualcomm, Advanced Tech R&D, San Diego, CA, USA
Marcos Simon, AudioScenic, Southampton UK

This session is presented in association with the AES Technical Committee on Audio for Games and AES Technical Committee on Spatial Audio

IS04 - 3D AUDIO PHILOSOPHIES & TECHNIQUES FOR COMMERCIAL MUSIC

Thursday, October 17, 4:30 pm – 5:30 pm

Room 1E08

Presenter: **Bt Gibbs**, Skyline Entertainment and Publishing, Morgan Hill, CA, USA; Tool Shed Studios, Morgan Hill, CA, USA

IS05 - BUILDING LISTENING TESTS IN VR

Friday, October 18, 9:00 am – 10:00 am

Room 1E08

Presenters: **Gavin Kearney**, University of York, York, UK
Tomasz Rudzki, University of York, York, UK
Benjamin Tsui, University of York, York, UK

This session is presented in association with the AES Technical Committee on Audio for Games

IS06 - CAPTURING REALITY WITH THE USE OF SPATIAL SOUND AND HIGH ORDER AMBISONICS—ETHNOGRAPHIC AND SIX DEGREES OF FREEDOM (6DOF) CASE STUDIES

Friday, October 18, 2:15 pm – 3:15 pm

Room 1E08

Moderator: **Tomasz Zernicki**, Zylia sp. z o.o., Poznan, Poland

Panelists: *Florian Grond*, McGill University, Montreal, Canada
Eduardo Patricio, Zylia Sp. z o.o., Poznan, Poland
Zack Settel, University of Montreal, Montreal, Quebec, Canada

IS07 - SIX-DEGREES-OF-FREEDOM (6DOF) SOUND CAPTURE AND PLAYBACK USING MULTIPLE HIGHER

Immersive & Spatial Audio

ORDER AMBISONICS (HOA) MICROPHONES

Friday, October 18, 3:30 pm – 4:30 pm

Room 1E08

Presenters: **Lukasz Januszkiewicz**, Zylia Sp. z o.o., Poznan, Poland
Eduardo Patricio, Zylia Sp. z o.o., Poznan, Poland
Tomasz Zernicki, Zylia sp. z o.o., Poznan, Poland

IS08 - AMBISONICS TOOLS FOR IMMERSIVE AUDIO CAPTURE AND POST-PRODUCTION

Saturday, October 19, 9:00 am – 12:00 noon

Room 1E13

Presenters: **Ianina Canalis**, National University of Lanús, Buenos Aires, Argentina
Brian Glasscock, Sennheiser
Andres A. Mayo, Andres Mayo Mastering & Audio Post, Buenos Aires, Argentina
Martin Muscatello, 360 Music Lab

Preregistration is required for this event. Tickets are \$75 (member) and \$125 (non-member) and can be purchased on-line when you register for the convention All Access Badge. Seating is limited.

IS09 - PRODUCING HIGH-QUALITY 360/3D VR CONCERT VIDEOS WITH 3D IMMERSIVE AUDIO

Saturday, October 19, 9:00 am – 10:30 am

Room 1E08

Presenters: **Ming-Lun Lee**, University of Rochester, Rochester, NY, USA
Steve Philbert, University of Rochester, Rochester, NY, USA

IS10 - MUSIC PRODUCTION FOR DOLBY ATMOS

Thursday, October 17, 10:30 am – 11:30 am

Room 1E06

Presenter: **Lasse Nipkow**, Silent Work LLC, Zurich, Switzerland

NETWORKED AUDIO

NA-01	Solution-Based Approaches	Wednesday, Oct. 16 9:00 am – 10:30 am Room 1E13
NA-02	An Introductory Tutorial to AES70	Wednesday, Oct. 16 2:45 pm – 4:15 pm Room 1E13

Networked Audio

NA-03	Media Networks	Saturday, Oct. 19 10:45 am – 12:15 pm Room 1E08
NA-04	Network Audio Strategies	Saturday, Oct. 19 1:30 pm – 2:30 pm Room 1E21
NA-05	Network Media Open Specifications	Saturday, Oct. 19 2:45 pm – 4:15 pm Room 1E21

NA01 - SOLUTION-BASED APPROACHES FOR NETWORKED AUDIO IN LIVE PRODUCTION

Wednesday, October 16, 9:00 am – 10:30 am
Room 1E13

Moderator: **Dan Ferrisi**, Sound & Communications,
Port Washington, NY, USA

Panelists: *Guido Esch*, New Motion Touring
Genio Kronauer, L-Acoustics, Marcoussis, France
Morten Lave, Morten Lave, Toronto, ON, Canada
Patrice Lavoie, Solotech
Rob Mele, Meyer Sound Laboratories
Jamie Pollock, Kore Audio Design LLC

NA02 - AN INTRODUCTORY TUTORIAL TO AES70

Wednesday, October 16, 2:45 pm – 4:15 pm
Room 1E13

Presenters: **Jeff Berryman**, OCA Alliance
Simon Jones, Focusrite
Ethan Wetzell, OCA Alliance

NA03 - WHAT AUDIO ENGINEERS NEED TO KNOW ABOUT MEDIA NETWORKS

Saturday, October 19, 10:45 am – 12:15 pm
Room 1E08

Presenter: **Patrick Killianey**, Audinate, Buena Park, CA, USA

NA04 - NETWORK AUDIO STRATEGIES: CHARTING SOFTWARES, HARDWARES, INTERNET REQUIREMENTS

Saturday, October 19, 1:30 pm – 2:30 pm
Room 1E21

Presenter: **Sarah Weaver**, NowNet Arts, Inc.

Off-Site Events

NA05 - NETWORK MEDIA OPEN SPECIFICATIONS (NMOS)— HOW THEY RELATE TO AUDIO NETWORKING

Saturday, October 19, 2:45 pm – 4:15 pm

Room 1E21

Presenter: **Andreas Hildebrand**, ALC NetworX GmbH, Munich,
Germany

OFF-SITE EVENTS

B-04	An Intimate Evening with Tesla and Twain	Wednesday, Oct. 16 7:00 pm & 9:00 pm Radio Waves Building
H-05	Tom Dowd Film	Thursday, Oct. 17 5:30 pm – 7:00 pm Dolby Theater
B-10	Tour of Stitcher Studios	Thursday, Oct. 17 7:00 pm – 8:00 pm Stitcher Studios
TT-01	Quad Recording Studio	Friday, Oct. 18 11:00 am – 2:00 pm Quad Studios
B-17	The Current War	Friday, Oct. 18 6:30 pm – 8:00 pm Dolby Theater

B04 - AN INTIMATE EVENING WITH TESLA AND TWAIN

Wednesday, October 16, 7:00 pm and 9:00 pm

The Radio Waves Building (49 West 27th Street, NYC) Penthouse

Presented by the HEAR Now Festival in tandem with SueMedia Radio Waves Studios at 7:00 pm and 9:00 pm. Tickets are required for each performance; free with your badge. Limited to 35 people per performance

H05 - LIMITED ENGAGEMENT SCREENING, TOM DOWD AND THE LANGUAGE OF MUSIC

Thursday, October 18, 5:30 pm – 7:00 pm

Dolby Theater, 1350 Ave. of the Americas

Seating is limited to 75 people and by advance ticket only.

NOTE: No food or drink (including water) is allowed in the Dolby Theater, so come hydrated and fed.

Doors will open shortly after 5, the program will start promptly at

Off-Site Events

5:30. Movie at 5:35pm, Q&A will follow at 7:05; event ends at 8:00 sharp.

Presented by the AES Historical Track in conjunction with Language of Music Films LLC and Dana Dowd

B10 - TOUR OF STITCHER STUDIOS

Thursday, October 17, 7:00 pm – 8:00 pm

Stitcher Studios, 5 Bryant Park (6th Ave. & 40th St.)

Limited to 20 people; tickets available at Registration

TT01 - TOUR OF QUAD RECORDING STUDIOS

Friday, October 18, 11:00 am – 2:00 pm

Quad Recording Studios, 723 7th Ave.

Limited to 30 people; tickets available at Registration

B17 - THE CURRENT WAR: DIRECTOR'S CUT

Friday, October 18, 6:30 pm – 8:00 pm

Dolby Theater, 1350 6th Ave. at W. 55th St.

This event is limited to 70 people. Tickets are required (free) and can be obtained at the Registration area.

PAPER SESSIONS

P-01	Applications in Audio	Wednesday, Oct. 16 9:00 am – 11:30 am Room 1E10
P-02	Audio Signal Processing	Wednesday, Oct. 16 9:00 am – 11:30 am Room 1E11
P-03	Posters: Transducers	Wednesday, Oct. 16 10:30 am – 12:00 noon South Concourse A
P-04	Room Acoustics	Wednesday, Oct. 16 1:30 pm – 5:00 pm Room 1E10
P-05	Transducers	Wednesday, Oct. 16 1:30 pm – 5:00 pm Room 1E11
P-06	Posters: Audio Signal Processing	Wednesday, Oct. 16 3:00 pm – 4:30 pm South Concourse A
P-07	Perception	Thursday, Oct. 17 9:00 am – 12:00 noon

Paper Sessions

P-08	Recording, Production, and Live Sound	Room 1E10 Thursday, Oct. 17 9:00 am – 12:00 noon
P-09	Posters: Applications in Audio	Room 1E11 Thursday, Oct. 17 10:00 am – 11:30 am South Concourse A
P-10	Spatial Audio—Part 1	Thursday, Oct. 17 1:15 pm – 4:15 pm Room 1E10
P-11	Semantic Audio	Thursday, Oct. 17 1:15 pm – 2:45 pm Room 1E11
P-12	Posters: Room Acoustics	Thursday, Oct. 17 3:00 pm – 4:30 pm South Concourse A
P-13	Spatial Audio—Part 2	Friday, Oct. 18 9:00 am – 11:00 am Room 1E10
P-14	Spatial Audio—Part 3	Friday, Oct. 18 1:45 pm – 4:15 pm Room 1E10
P-15	Audio Education	Saturday, Oct. 19 9:00 am – 11:30 am Room 1E10
P-16	Posters: Spatial Audio	Saturday, Oct. 19 10:30 am – 12:00 noon South Concourse A
P-17	Product Development	Saturday, Oct. 20 3:00 pm – 5:30 pm Room 1E09
P-18	Posters: Perception	Saturday, Oct. 20 3:00 pm – 4:30 pm South Concourse A

Session P1 - APPLICATIONS IN AUDIO **Wednesday, Oct. 16, 9:00 am – 11:30 am** **Room 1E10**

Chair: **Kevin Bastyr**, Harman International, Novi, MI, USA

9:00 am

P1-1 Personal Sound Zones: A Comparison between Frequency and Time Domain Formulations in a Transportation Context—*Lucas Vindrola*,^{1,2} *Manuel Melon*,¹ *Jean-Christophe Chamard*,² *Bruno Gazengel*,¹ France; *Guy Plantier*¹

¹ LAUM, Le mans Université, Les Mans, France

Paper Sessions

² PSA Group, Rueil-Malmison, France

Convention Paper 10216

9:30 am

P1-2 Mitigating the Effect of In-Vehicle Road Noise Cancellation on Music Playback—*Tao Feng, Kevin Bastyr*, Harman International, Novi, MI, USA

Convention Paper 10217

10:00 am

P1-3 Effect of a Global Metronome on Ensemble Accuracy in Networked Music Performance—*Robert Hupke, Lucas Beyer, Marcel Nophut, Stephan Preihs, Jürgen Peissig*, Leibniz Universität Hannover, Hannover, Germany

Convention Paper 10218

10:30 am

P1-4 Evaluation of Multichannel Audio in Automobiles versus Mobile Phones—*Fesal Toosy, Muhammad Sarwar Ehsan*, University of Central Punjab, Lahore, Pakistan

Convention Paper 10219

11:00 am

P1-5 Realizing An Acoustic Vector Network Analyzer—*Marcus MacDonell, Jonathan Scott*, University of Waikato, Hamilton, Waikato, New Zealand

Convention Paper 10220

Session P2 - AUDIO SIGNAL PROCESSING

Wednesday, Oct. 16, 9:00 am – 12:00 noon

Room 1E11

Chair: **Scott Hawley**, Belmont University, Nashville, TN, USA

9:00 am

P2-1 Analyzing and Extracting Multichannel Sound Field—*Pei-Lun Hsieh*, Ambidio, Glendale, CA, USA

Convention Paper 10221

9:30 am

P2-2 Profiling Audio Compressors with Deep Neural Networks—*Scott Hawley,¹ Benjamin Colburn,² Stylianos Ioannis Mimitakis³*

¹ Belmont University, Nashville, TN, USA

Paper Sessions

² ARIA Acoustics, Washington, DC, USA

³ Fraunhofer Institute for Digital Media Technology (IDMT), Ilmenau, Germany

Convention Paper 10222

10:00 am

P2-3 Digital Parametric Filters Beyond Nyquist Frequency—
Juan Sierra, Stanford University, Stanford, CA, USA

Convention Paper 10224

10:30 am

P2-4 Using Volterra Series Modeling Techniques to Classify Black-Box Audio Effects—
Ethan Hoerr, Robert C. Maher, Montana State University, Bozeman, MT, USA

Convention Paper 10225

11:00 am

P2-5 Modifying Audio Signals for Reproduction with Reduced Room Effect—
Christof Faller, Illusonic GmbH, Uster, Zürich, Switzerland

Convention Paper 10226

11:30 am

P2-6 On the Similarity between Feedback/Loopback Amplitude and Frequency Modulation—
Tamara Smyth, University of California, San Diego, San Diego, CA, USA

Convention Paper 10223

Session P3 - POSTERS: TRANSDUCERS

Wednesday, Oct. 16, 10:30 am – 12:00 noon

South Concourse A

10:30 am

P3-1 Acoustic Beamforming on Transverse Loudspeaker Array Constructed from Micro-Speakers Point Sources for Effectiveness Improvement in High-Frequency Range—
Bartłomiej Chojnacki, Klara Juros, Daniel Kaczor, Tadeusz Kamisinski, AGH University of Science and Technology, Cracow, Poland

Convention Paper 10227

10:30 am

P3-2 Spherical Microphone Array Shape to Improve Beamforming Performance—
Sakurako Yazawa, Hiroaki Ito, Ken'ichi Noguchi, Kazunori Kobayashi, Noboru

Paper Sessions

Harada, NTT Media Intelligence Laboratories, NTT Corporation, Japan

Convention Paper 10228

10:30 am

P3-3 Infinite Waveguide Termination by Series Solution in Finite Element Analysis—*Patrick Macey*, PACSYS Limited, Nottingham, UK

Convention Paper 10229

10:30 am

P3-4 Evaluating Listener Preference of Flat-Panel Loudspeakers—*Stephen Roessner, Michael Heilemann, Mark F. Bocko*, University of Rochester, Rochester, NY, USA

Convention Paper 10230

10:30 am

P3-5 Modelling of a Chip Scale Package on the Acoustic Behavior of a MEMS Microphone—*Yafei Nie, Jinqiu Sang, Chengshi Zheng, Xiaodong Li*, Chinese Academy of Sciences, Beijing, China; University of Chinese Academy of Sciences, Beijing, China

Convention Paper 10231

10:30 am

P3-6 Personalized and Self-Adapting Headphone Equalization Using Near Field Response—*Adrian Celestinos, Elisabeth McMullin, Ritesh Banka, Pascal Brunet*, Samsung Research America, Digital Media Solutions, Valencia, CA USA

Convention Paper 10232

10:30 am

P3-7 Applying Sound Equalization to Vibrating Sound Transducers Mounted on Rigid Panels—*Stefania Cecchi,¹ Alessandro Terenzi,¹ Francesco Piazza,¹ Ferruccio Bettarelli²*

¹ Università Politecnica della Marche, Ancona, Italy

² Leaff Engineering, Osimo, Italy

Convention Paper 10233

Session P4 - ROOM ACOUSTICS

Wednesday, Oct. 16, 1:30 pm – 5:00 pm

Room 1E10

Chair: **David Griesinger**, David Griesinger Acoustics, Cambridge, MA, USA

Paper Sessions

1:30 pm

P4-1 Use of Wavelet Transform for the Computation of Modal Decay Times in Rooms—Roberto Magalotti,¹ Daniele Ponteggia²,

¹ B&C Speakers S.p.A., Bagno a Ripoli (FI), Italy

² Audiomatica Srl, Firenze, Italy

Convention Paper 10235

2:00 pm

P4-2 What's Old Is New Again: Using a Physical Scale Model Echo Chamber as a Real-Time Reverberator—Kevin Delcourt,^{1,2} Franck Zagala,² Alan Blum,¹ Brian F. G. Katz²

¹ École Nationale Supérieure Louis Lumière,
Saint-Denis, France

² Sorbonne Université, Paris, Paris, France

Convention Paper 10236

2:30 pm

P4-3 Synthesis of Binaural Room Impulse Responses for Different Listening Positions Considering the Source Directivity—Ulrike Sloma, Florian Klein, Stephan Werner, TTyson Pappachan Kannookadan, TU- Ilmenau, Ilmenau, Germany

Convention Paper 10237

3:00 pm

P4-4 Extracting the Fundamental Mode from Sound Pressure Measurements in an Acoustic Tube—Joerg Panzer, R&D Team, Salgen, Germany

Convention Paper 10238

3:30 pm

P4-5 Accurate Reproduction of Binaural Recordings through Individual Headphone Equalization and Time Domain Crosstalk Cancellation—David Griesinger, David Griesinger Acoustic, Cambridge, MA, USA

Convention Paper 10239

4:00 pm

P4-6 Concert Hall Acoustics' Influence on the Tempo of Musical Performances—Jan Berg, Luleå University of Technology, Piteå, Sweden

Convention Paper 10240

4:30 pm

P4-7 Optimum Measurement Locations for Large-Scale Loud-

Paper Sessions

speaker System Tuning Based on First-Order Reflections Analysis—*Samuel Moulin, Etienne Corteel, François Montignies*, L-Acoustics, Marcoussis, France
Convention Paper 10234

Session P5 - SIGNAL PROCESSING—PART 2

Wednesday, Oct. 16, 1:30 pm – 5:00 pm

Room 1E11

Chair: **Todd Welti**, Harman International Inc., Northridge, CA, USA

1:30 pm

P5-1 Nonlinear Control of Loudspeaker Based on Output Flatness and Trajectory Planning—*Pascal Brunet, Glenn S. Kubota*, Samsung Research America, Valencia, CA, USA
Convention Paper 10241

2:00 pm

P5-2 Perceptual Assessment of Distortion in Low-Frequency Loudspeakers—*Louis Fielder*,¹ *Michael Smithers*²
¹ Retired, Millbrae, CA, USA
² Dolby Laboratories, Sydney, NSW, Australia

Convention Paper 10242

2:30 pm

P5-3 Rethinking Flat Panel Loudspeakers—An Objective Acoustic Comparison of Different Speaker Categories—*Benjamin Zenker, Sebastian Merchel, M. Ercan Altinsoy*, TU Dresden, Dresden, Germany

Convention Paper 10243

3:00 pm

P5-4 Modelling and Measurement of Nonlinear Intermodal Coupling in Loudspeaker Diaphragm Vibrations—*William Cardenas*, ORA Graphine Audio Inc., Montreal, Quebec, Canada

Convention Paper 10244

3:30 pm

P5-5 Sound Capture by Microphone Vibration inside Playback Devices—*Rivanaldo De Oliveira*, Qualcomm Technologies, Inc., San Diego, CA, USA

Convention Paper 10245

Paper Sessions

4:00 pm

- P5-6 Low Deviation and High Sensitivity—Optimized Exciter Positioning for Flat Panel Loudspeakers by Considering Averaged Sound Pressure Equalization—***Benjamin Zenker, TShanavaz Sanjay Abdul Rawoof, Sebastian Merchel, M. Ercan Altinsoy*, TU Dresden, Dresden, Germany

Convention Paper 10246

4:30 pm

- P5-7 A Comparison of Test Methodologies to Personalize Headphone Sound Quality—***Todd Welti, Omid Khonsaripour, Sean Olive, Dan Pye*, Harman International, Northridge, CA, USA

Convention Paper 10247

Session P6 - POSTERS: AUDIO SIGNAL PROCESSING

Thursday, Oct. 16, 3:00 pm – 4:30 pm

South Concourse A

3:00 pm

- P6-1 Modal Representations for Audio Deep Learning—***Travis Skare, Jonathan S. Abel, Julius O. Smith, III*, Stanford University, Stanford, CA, USA

Convention Paper 10248

3:00 pm

- P6-2 Distortion Modeling of Nonlinear Systems Using Ramped-Sines and Lookup Table—***Paul Mayo,¹ Wesley Bulla²*

¹ University of Maryland, College Park, MD, USA

² Belmont University, Nashville, TN, USA

Convention Paper 10249

3:00 pm

- P6-3 An Open Audio Processing Platform Using SoC FPGAs and Model-Based Development—***Trevor Vannoy,^{1,2} Tyler Davis,² Connor Dack,² Dustin Sobrero,² Ross Snider^{1,2}*

¹ Montana State University, Bozeman, MT, USA

² Flat Earth Inc., Bozeman, MT, USA

Convention Paper 10250

3:00 pm

- P6-4 Objective Measurement of Stereophonic Audio Quality in the Directional Loudness Domain—***Pablo Delgado,¹ Jürgen Herre^{1,2}*

Paper Sessions

¹ International Audio Laboratories Erlangen,
Erlangen, Germany

² Fraunhofer Institute for Integrated Circuits IIS,
Erlangen, Germany

Convention Paper 10251

3:00 pm

P6-5 Detection of the Effect of Window Duration in an Audio Source Separation Paradigm—*Ryan Miller, Wesley Bulla, Eric Tarr*, Belmont University, Nashville, TN, USA

Convention Paper 10252

3:00 pm

P6-6 Use of DNN-Based Beamforming Applied to Different Microphone Array Configurations—*Tae Woo Kim, Nam Kyun Kim, Geon Woo Lee, Inyoung Park, Hong Kook Kim*, Gwangju Institute of Science and Tech (GIST), Gwangju, Korea

Convention Paper 10253

3:00 pm

P6-7 Deep Neural Network Based Guided Speech Bandwidth Extension—*Konstantin Schmidt*,¹ Bernd Edler^{1,2}

¹ Friedrich-Alexander-University (FAU), Erlangen, Germany;

² Fraunhofer Institute for Integrated Circuits IIS, Erlangen, Germany

Convention Paper 10254

3:00 pm

P6-8 Analysis of the Sound Emitted by Honey Bees in a Beehive—*Stefania Cecchi, Alessandro Terenzi, Simone Orcioni, Francesco Piazza*, Università Politecnica della Marche, Ancona (AN), Italy

Convention Paper 10255

3:00 pm

P6-9 Improvement of DNN-Based Speech Enhancement with Non-Normalized Features by Using an Automatic Gain Control—*Linjuan Cheng, Chengshi Zheng, Renhua Peng, Xiaodong Li*, Key Laboratory of Noise and Vibration Research, Institute of Acoustics, Chinese Academy of Sciences, Beijing, China; University of Chinese Academy of Sciences, Beijing, China

Convention Paper 10256

Paper Sessions

Session P7 - PERCEPTION

Thursday, Oct. 17, 9:00 am – 12:00 noon

Room 1E10

Chair: **Elisabeth McMullin**, Samsung Research America,
Valencia, CA, USA

9:00 am

P7-1 A Binaural Model to Estimate Room Impulse Responses from Running Signals and Recordings—*Jonas Braasch, David Dahlbom, Nate Keil*, Rensselaer Polytechnic Institute, Troy, NY, USA

Convention Paper 10257

9:30 am

P7-2 Describing the Audible Effects of Nonlinear Loudspeaker Distortion—*Elisabeth McMullin, Pascal Brunet, Zhongran Wang*, Samsung Research America, Valencia, CA, USA

Convention Paper 10258

10:00 am

P7-3 Spatial Auditory Masking for Three-Dimensional Audio Coding—*Masayuki Nishiguchi, Kodai Kato, Kanji Watanabe, Koji Abe, Shouichi Takane*, Akita Prefectural University, Yurihonjo, Akita, Japan

Convention Paper 10259

10:30 am

P7-4 Investigation of Masking Thresholds for Spatially Distributed Sound Sources—*Sascha Dick,¹ Rami Sweidan,^{1,2} Jürgen Herre¹*

¹ International Audio Laboratories Erlangen, a joint institution of Universität Erlangen-Nürnberg and Fraunhofer IIS, Erlangen, Germany

² University of Stuttgart, Stuttgart, Germany

Convention Paper 10260

11:00 am

P7-5 An Attempt to Elicit Horizontal and Vertical Auditory Precedence Percepts without Pinnae Cues—*Wesley Bulla,¹ Paul Mayo²*

¹ Belmont University, Nashville, TN, USA

² University of Maryland, College Park, MD, USA

Convention Paper 10261

Paper Sessions

11:30 am

P7-6 Perceptual Weighting to Improve Coding of Harmonic Signals—*Elias Nemer, Zoran Fejzo, Jeff Thompson*, XPERI/DTS, Calabasas, CA, USA

Convention Paper 10262

Session P8 - RECORDING, PRODUCTION, AND LIVE SOUND

Thursday, Oct. 17, 9:00 am – 11:30 am

Room 1E11

Chair: **Wieslaw Woszczyk**, McGill University, Montreal, QC, Canada

9:00 am

P8-1 Microphone Comparison: Spectral Feature Mapping for Snare Drum Recording—*Matthew Cheshire, Ryan Stables, Jason Hockman*, Birmingham City University, Birmingham, UK

Convention Paper 10263

9:30 am

P8-2 An Automated Approach to the Application of Reverberation—*Dave Moffat, Mark Sandler*, Queen Mary University of London, London, UK

Convention Paper 10264

10:00 am

P8-3 Subjective Graphical Representation of Microphone Arrays for Vertical Imaging and Three-Dimensional Capture of Acoustic Instruments, Part II—*Bryan Martin, Denis Martin, Richard King, Wieslaw Woszczyk*, Montreal, QC, Canada; Centre for Interdisciplinary Research in Music Media and Technology (CIRMMT), Montreal, QC, Canada;

Convention Paper 10265

10:30 am

P8-4 Filling The Space: The Impact of Convolution Reverberation Time on Note Duration and Velocity in Duet Performance—*James Weaver,¹ Mathieu Barthelet,¹ Elaine Chew²*

¹ Queen Mary University of London, London, UK

² CNRS-UMR9912/STMS (IRCAM), Paris, France

Convention Paper 10266

11:00 am

P8-5 The Effects of Spectators on the Speech Intelligibil-

Paper Sessions

ity Performance of Sound Systems in Stadia and Other Large Venues—Peter Mapp,¹ Ross Hammond²

¹ Peter Mapp Associates - Colchester, Essex, UK;

² University of Derby, Derby, Derbyshire

Convention Paper 10267

Session P9 - POSTERS: APPLICATIONS IN AUDIO

Thursday, Oct. 17, 9:00 am – 10:30 am

South Concourse A

9:00 am

P9-1 Analyzing Loudness Aspects of 4.2 Million Musical Albums in Search of an Optimal Loudness Target for Music Streaming—Elco Grimm, HKU University of the Arts, Utrecht, Netherlands

Convention Paper 10268

9:00 am

P9-2 Audio Data Augmentation for Road Objects Classification—Ohad Barak, Nizar Sallem, Mentor Graphics, Mountain View, CA, USA

Convention Paper 10269

9:00 am

P9-3 Is Binaural Spatialization the Future of Hip-Hop?—Kierian Turner,¹ Amandine Pras^{1,2}

¹ University of Lethbridge, Lethbridge, AB, Canada

² School for Advanced Studies in the Social Sciences (EHESS), Paris, France

Convention Paper 10270

9:00 am

P9-4 Alignment and Timeline Construction for Incomplete Analogue Audience Recordings of Historical Live Music Concerts—Thomas Wilmering, Florian Thalmann, Mark Sandler, Queen Mary University of London, London, UK

Convention Paper 10271

9:00 am

P9-5 Noise Robustness Automatic Speech Recognition with Convolutional Neural Network and Time Delay Neural Network—Jie Wang,¹ Dunze Wang,¹ Yunda Chen,¹ Xun Lu,² Chengshi Zheng³,

¹ Guangzhou University, Guangzhou, China

² Power Grid Planning Center, Guangdong Power Grid Company, Guangdong, China

Paper Sessions

³ Institute of Acoustics, Chinese Academy of Sciences,
Beijing, China

Convention Paper 10272

Session P10 - SPATIAL AUDIO, PART 1

Thursday, Oct. 17, 1:15 pm – 4:15 pm

Room 1E10

Chair: **Sungyoung Kim**, Rochester Institute of Technology,
Rochester, NY, USA

1:15 pm

P10-1 Use of the Magnitude Estimation Technique in Reference-Free Assessments of Spatial Audio Technology—*Alex Brandmeyer, Dan Darcy, Lie Lu, Richard Graff, Nathan Swedlow, Poppy Crum*, Dolby Laboratories, San Francisco, CA, USA

Convention Paper 10273

1:45 pm

P10-2 Subjective Assessment of the Versatility of Three-Dimensional Near-Field Microphone Arrays for Vertical and Three-Dimensional Imaging—*Bryan Martin*,^{1,2}
Jack Kelly,^{1,2} *Brett Leonard*^{3,4}

¹ McGill University, Montreal, QC, Canada

² Centre for Interdisciplinary Research in Music Media and Technology (CIRMMT), Montreal, QC, Canada

³ University of Indianapolis, Indianapolis, IN, USA

⁴ BLPaudio, Indianapolis, IN, USA

Convention Paper 10274

2:15 pm

P10-3 Defining Immersion: Literature Review and Implications for Research on Immersive Audiovisual Experiences—*Sarvesh Agrawal*,^{1,2} *Adèle Simon*,¹ *Søren Bech*,^{1,3} *Klaus Bærentsen*,⁴ *Søren Forchhammer*²

¹ Bang & Olufsen a/s, Struer, Denmark

² Technical University of Denmark, Lyngby, Denmark

³ Aalborg University, Aalborg, Denmark

⁴ Aarhus University, Aarhus, Denmark

Convention Paper 10275

2:45 pm

P10-4 Evaluation on the Perceptual Influence of Floor Level Loudspeakers for Immersive Audio Reproduction—*Yannik Grewe, Andreas Walther, Julian Klapp*, Fraunhofer Institute for Integrated Circuits IIS, Erlangen, Germany

Convention Paper 10276

Paper Sessions

3:15 pm

**P10-5 Investigating Room-Induced Influences on Immersive Experience Part II: Effects Associated with Listener Groups and Musical Excerpts—*Sungyoung Kim*,¹
*Shuichi Sakamoto*²**

¹ Rochester Institute of Technology, Rochester, NY, USA

² Tohoku University, Sendai, Japan

Convention Paper 10277

3:45 pm

P10-6 Comparison Study of Listeners' Perception of 5.1 and Dolby Atmos—*Tomas Oramus, Petr Neubauer*, Academy of Performing Arts in Prague, Prague, Czech Republic

Convention Paper 10278

Session P11 - SEMANTIC AUDIO

Thursday, Oct. 17, 1:15 pm – 2:45 pm

Room 1E11

Chair: **Robert C. Maher**, Montana State University,
Bozeman, MT, USA

1:15 pm

P11-1 Impact of Statistical Parameters of Late Reverberation on the Instantaneous Frequencies of Reverberant Audio—*Sarah R. Smith, Mark F. Bocko*, University of Rochester, Rochester, NY, USA

Convention Paper 10279

1:45 pm

P11-2 Precise Temporal Localization of Sudden Onsets in Audio Signals Using the Wavelet Approach—*Yuxuan Wan, Yijia Chen, Keegan Yi Hang Sim, Lijia Wu, Xianzheng Geng, Kevin Chau*, Hong Kong University of Science and Technology, Clean Water Bay, Hong Kong

Convention Paper 10280

2:15 pm

P11-3 Forensic Comparison of Simultaneous Recordings of Gunshots at a Crime Scene—*Robert C. Maher, Ethan Hoerr*, Montana State University, Bozeman, MT, USA

Convention Paper 10281

Paper Sessions

Session P12 - POSTERS: ROOM ACOUSTICS

Thursday, October 17, 3:00 pm – 4:30 pm

South Concourse A

3:00 pm

P12-1 Transparent Office Screens Based on Microperforated Foil—*Krzysztof Brawata,¹ Katarzyna Baruch,¹ Tadeusz Kamisinski,² Bartłomiej Chojnacki²*

¹ Gorycki&Sznyterman Sp. z o.o., Cracow, Poland

² AGH University of Science and Technology, Cracow, Poland

Convention Paper 10282

3:00 pm

P12-2 A Novel Spatial Impulse Response Capture Technique for Realistic Artificial Reverberation in the 22.2 Multichannel Audio Format—*Jack Kelly, Richard King, Wieslaw Woszczyk*, McGill University, Montreal, QC, Canada, The Centre for Interdisciplinary Research in Music Media and Technology, Montreal, Quebec, Canada

Convention Paper 10283

3:00 pm

P12-3 Impulse Response Simulation of a Small Room and in situ Measurements Validation—*Daniel Núñez-Solano, Virginia Puyana-Romero, Cristian Ordóñez-Andrade, Luis Bravo-Moncayo, Christiam Garzón-Pico*, Universidad de Las Américas, Quito, Ecuador

Convention Paper 10284

3:00 pm

P12-4 Calculation of Directivity Patterns from Spherical Microphone Array Recordings—*Carlotta Anemüller, Jürgen Herre*, International Audio Laboratories Erlangen, Erlangen, Germany

Convention Paper 10285

Session P13 - SPATIAL AUDIO, PART 2

Friday, Oct. 18, 9:00 am – 11:00 pm

Room 1E10

Chair: **Doyuen Ko**, Belmont University, Nashville, TN, USA

9:00 am

P13-1 Simplified Source Directivity Rendering in Acoustic Virtual Reality Using the Directivity Sample Combination—*Georg Götz, Ville Pulkki*, Aalto University, Espoo, Finland

Paper Sessions

Convention Paper 10286

9:30 am

- P13-2 Classification of HRTFs Using Perceptually Meaningful Frequency Arrays**—*Nolan Eley*, New York University, New York, NY, USA

Convention Paper 10288

10:00 am

- P13-3 An HRTF Based Approach towards Binaural Sound Source Localization**—*Kaushik Sunder*,¹ *Yuxiang Wang*²
¹ Embody VR, Mountain View, CA, USA
² Rochester Institute of Technology, Rochester, NY, USA

Convention Paper 10289

10:30 am

- P13-4 Physical Controllers vs. Hand-and-Gesture Tracking: Control Scheme Evaluation for VR Audio Mixing**—*Justin Bennington*, *Doyuen Ko*, Belmont University, Nashville, TN, USA

Convention Paper 10290

Session P14 - SPATIAL AUDIO, PART 3

Friday, Oct. 18, 1:45 pm – 4:15 pm

Room 1E10

Chair: **Christof Faller**, Illusonic GmbH, Uster, Zürich, Switzerland; EPFL, Lausanne, Switzerland

1:45 pm

- P14-1 Measurement of Oral-Binaural Room Impulse Response by Singing Scales**—*Munhum Park*, King Mongkut's Institute of Technology Ladkrabang, Bangkok, Thailand

Convention Paper 10291

2:15 pm

- P14-2 Effects of Capsule Coincidence in FOA Using MEMS: Objective Experiment**—*Gabriel Zalles*, University of California, San Diego, La Jolla, CA, USA

Convention Paper 10292

2:45 pm

- P14-3 Spatial B-Format Equalization**—*Alexis Favrot*, *Christof Faller*, Illusonic GmbH, Uster, Zürich, Switzerland

Convention Paper 10293

Paper Sessions

3:15 pm

P14-4 Exploratory Research into the Suitability of Various 3D Input Devices for an Immersive Mixing Task—Diego I Quiroz Orozco, Denis Martin, McGill University, Montreal, QC, Canada; Centre for Interdisciplinary Research in Music Media and Technology (CIRMMT), Montreal, QC, Canada

Convention Paper 10294

3:45 pm

P14-5 The 3DCC Microphone Technique: A Native B-format Approach to Recording Musical Performance—Kathleen “Ying-Ying” Zhang, Paul Geluso, New York University, New York, NY, USA

Convention Paper 10295

Session P15 - AUDIO EDUCATION

Saturday, Oct. 19, 9:00 am – 11:30 am

Room 1E10

Chair: **Amandine Pras**, Digital Audio Arts, University of Lethbridge, Lethbridge, Alberta, Canada; School for Advanced Studies in the Social Sciences, Paris, France

9:00 am

P15-1 Production Processes of Pop Music Arrangers in Bamako, Mali—Amandine Pras,^{1,2} Kierian Turner,¹ Toby Bol,¹ Emmanuelle Olivier^{2,3}

¹ Digital Audio Arts, University of Lethbridge, Lethbridge, Alberta, Canada

² School for Advanced Studies in the Social Sciences, Paris, France

³ National Centre for Scientific Research, Paris, France

Convention Paper 10296

9:30 am

P15-2 Towards a Pedagogy of Multitrack Audio Resources for Sound Recording Education—Kirk McNally,¹ Paul Thompson,² Ken Scott²

¹ University of Victoria, Victoria, BC, Canada

² Leeds Beckett University, Leeds, West Yorkshire, UK

Convention Paper 10297

10:00 am

P15-3 The History of Record Production as a Learning Element for Audio Education—The Particular Case of the Recording Arts Program at the ITM in Medellín Colombia—Daniel Marin Jaramillo,¹ Carlos Andrés Caballero Parra^{1,2}

Paper Sessions

¹ Instituto Tecnológico Metropolitano, Medellín, Colombia

² Universidad Politécnica de Valencia, València, Spain

Convention Paper 10298

10:30 am

P15-4 Mental Representations in Critical Listening Education: A Preliminary Study—*Stephane Elmosnino*, University of Technology Sydney, Sydney, New South Wales, Australia

Convention Paper 10299

11:00 am

P15-5 The Generation Gap—Perception and Workflow of Analog vs. Digital Mixing—*Ryland Chambers-Moranz*,¹
Amandine Pras,^{1,2} *Nate Thomas*¹

¹ Digital Audio Arts, University of Lethbridge, Lethbridge, Alberta, Canada

² School for Advanced Studies in the Social Sciences, Paris, France

Convention Paper 10300

Session P16 - POSTERS: SPATIAL AUDIO

Saturday, Oct. 19, 10:30 am – 12:00 noon

South Concourse A

10:30 am

P16-1 Calibration Approaches for Higher Order Ambisonic Microphone Arrays—*Charles Middlicott*,^{1,2} *Bruce Wiggins*¹

¹ University of Derby, Derby, Derbyshire, UK

² Sky Labs Brentwood, Essex, UK

Convention Paper 10301

10:30 am

P16-2 A Qualitative Investigation of Soundbar Theory—
Julia Perla, *Wesley Bulla*, Belmont University, Nashville, TN, USA

Convention Paper 10302

10:30 am

P16-3 The Effect of the Grid Resolution of Binaural Room Acoustic Auralization on Spatial and Timbral Fidelity—
Dale Johnson, *Hyunkook Lee*, University of Huddersfield, Huddersfield, UK

Convention Paper 10303

10:30 am

P16-4 A Compact Loudspeaker Matrix System to Create 3D

Paper Sessions

Sounds for Personal Uses—*Aya Saito, Takahiro Nemoto, Akira Saji, Jie Huang*, University of Aizu, Aizuwakamatsu City, Japan

Convention Paper 10304

10:30 am

P16-5 Evaluation of Spatial Audio Quality of the Synthesis of Binaural Room Impulse Responses for New Object Positions—*Stephan Werner, Florian Klein, Clemens Müller*, Technical University of Ilmenau, Ilmenau, Germany

Convention Paper 10305

10:30 am

P16-6 Investigating the Importance of Height Channels of Cinema Surround Systems—*Ahmed Shalabi*, Overdub Productions, London, UK

Convention Paper 10306

10:30 am

P16-7 An Adaptive Crosstalk Cancellation System Using Microphones at the Ears—*Tobias Kabzinski, Peter Jax*, RWTH Aachen University, Aachen, Germany

Convention Paper 10307

10:30 am

P16-8 Immersive Sound Reproduction in Real Environments Using a Linear Loudspeaker Array—*Valeria Bruschi, Nicola Ortolani, Stefania Cecchi, Francesco Piazza*, Università Politecnica della Marche, Ancona (AN), Italy

Convention Paper 10308

10:30 am

P16-9 The Influences of Microphone System, Video, and Listening Position on the Perceived Quality of Surround Recording for Sport Content—*Aimee Moulson, Hyunkook Lee*, University of Huddersfield, Huddersfield, UK

Convention Paper 10309

10:30 am

P16-10 Sound Design and Reproduction Techniques for Co-Located Narrative VR Experiences—*Marta Gospodarek, Andrea Genovese, Dennis Dembeck, Corinne Brenner, Agnieszka Roginska, Ken Perlin*, New York University, New York, NY, USA

Convention Paper 10287

Product Development

Session P17 - PRODUCT DEVELOPMENT

Saturday, Oct. 19, 3:00 pm – 5:30 pm

Room 1E09

Chair: **Phil Brown**, Dolby Laboratories, San Francisco, CA, USA

3:00 pm

P17-1 Summed Efficiency-Method for Efficient Vented Box Speaker Design—*Niels Elkjær Iversen,^{1,2} Theis Christensen,² Anders Bjørnskov,² Lars Petersen²*

¹ Technical University of Denmark, Kogens Lyngby, Denmark

² ICEpower, Søborg, Denmark

Convention Paper 10310

3:30 pm

P17-2 Loudspeaker Port Design for Optimal Performance and Listening Experience—*Andri Bezzola, Allan Devantier, Elisabeth McMullin*, Samsung Research America, Valencia, CA USA

Convention Paper 10311

4:00 pm

P17-3 A Method for Three-Dimensional Horn Geometry Optimization—*Christoper Smolen, Jerome Halley*, QSC Audio Products LLC, Costa Mesa, CA, USA

Convention Paper 10312

4:30 pm

P17-4 A Perceptually-Motivated Headphone Transparency Algorithm—*Josh Lando, Alex Brandmeyer, Phil Brown, Alan Seefeldt, Andy Jaspar*, Dolby Laboratories, San Francisco, CA, USA

Convention Paper 10313

5:00 pm

P17-5 Temporal Envelope-Based Psychoacoustic Modelling for Evaluating Non-Waveform Preserving Audio Codecs—

Steven van de Par,^{1,2} Sascha Disch,^{3,4} Andreas Niedermeier,³ Elena Burdiel Pérez,³ Bernd Edler⁴

¹ University of Oldenburg, Oldenburg, Germany

² Fraunhofer HSA, Oldenburg, Germany

³ Fraunhofer IIS, Erlangen, Germany

⁴ Friedrich Alexander University, Erlangen-Nürnberg, Germany

Convention Paper 10314

Paper Sessions

Session P18 - POSTERS: PERCEPTION

Saturday, Oct. 19, 3:00 pm – 4:30 pm

South Concourse A

3:00 pm

P18-1 Comparison of Human and Machine Recognition of Electric Guitar Types—*Renato Profeta, Gerald Schuller*, Ilmenau University of Technology, Ilmenau, Germany

Convention Paper 10315

3:00 pm

P18-2 Preference for Harmonic Intervals Based on Overtone Content of Complex Tones—*Benjamin Fox, Wesley Bulla*, Belmont University, Nashville, TN, USA

Convention Paper 10316

3:00 pm

P18-3 Just Noticeable Difference for Dynamic Range Compression via “Limiting” of a Stereophonic Mix—*Christopher Hickman, Wesley Bulla*, Belmont University, Nashville, TN, USA

Convention Paper 10317

3:00 pm

P18-4 Discrimination of High-Resolution Audio without Music—*Yuki Fukuda, Shunsuke Ishimitsu*, Hiroshima City University, Hiroshima, Japan

Convention Paper 10318

3:00 pm

P18-5 Subjective Evaluation of Multichannel Audio and Stereo on Cell Phones—*Fesal Toosy, Muhammad Sarwar Ehsan*, University of Central Punjab, Lahore, Pakistan

Convention Paper 10319

PRODUCT DEVELOPMENT

PD-01	The Predictable Horn	Wednesday, Oct. 16 9:00 am –10:30 am Room 1E09
PD-02	Directivity Optimization Passive Loudspeaker System	Wednesday, Oct. 16 10:30 am –12:00 noon Room 1E09