

Anbei eine nach Themen geordnete Liste der Fachliteratur, die sich speziell mit der Akustik kleiner Räume beschäftigt. Da nicht alles, was messbar ist, auch unbedingt wahrnehmbar ist, habe ich auch Artikel aus dem Gebiet der Psychoakustik aufgelistet, soweit sie sich mit Themen beschäftigen, die für 2-Kanal-Stereophonie von Interesse sind. Des weiteren sind Artikel aufgenommen, die sich mit digitaler „Raumkorrektur“ beschäftigen, sowie im letzten Teil Artikel, die sich Themen beschäftigen, die im allgemeinen und im Rahmen der 2-Kanal-Stereophonie im besonderen von Interesse sein können.

Einige der Artikel sind im Internet eingestellt, die links sind dann beigefügt. Alle anderen Artikel sind auf Anfrage als pdf erhältlich. Sowie ich auf weitere Artikel stosse, wird die Liste ergänzt.

## **Bass, Raummoden, Subwoofer**

Allison, “The influence of room boundaries on loudspeaker power output”, J. of the Audio Engineering Society 1974, S.314

Allison, “The sound field in home listening rooms part 2”, J. of the Audio Engineering Society 1976, S.14

Allison, “Influence of listening rooms on loudspeaker systems”, Audio Magazine Aug. 1979, S.37

Angus, “The behaviour of rooms at low frequencies”, Audio Engineering Society Preprint 4421 (1997)

Avis et al., “Thresholds of detection for changes to the Q factor of low-frequency modes in listening environments ”, J. of the Audio Engineering Society 2007, S.611

Backman, “Subwoofers in rooms: effect of absorptive and resonant room structures”, Audio Engineering Society Preprint 7957 (2009)

Backman, “Subwoofers in symmetrical and asymmetrical rooms”, Audio Engineering Society Preprint 7748 (2009)

Backman, “Low-frequency polar pattern control for improved in-room response”, Audio Engineering Society Preprint 5867 (2003)

Backman, “Subwoofers in rooms: experimental modal analysis”, Audio Engineering Society Preprint 7970 (2010)

Bolt et al., “Frequency response fluctuations in rooms”, J. of the Acoustical Society of America 1950, vol. 22, no. 2, S.280

Bolt, "Normal modes of vibration in room acoustics: angular distribution theory", J. of the Acoustical Society of America 1939, vol. 11, S.74

Bolt, "Note on normal frequency statistics in rectangular rooms", J. of the Acoustical Society of America 1946, vol. 18, no. 1, S.130

Bork, „Modalanalyse stehender Wellen“, Fortschritte der Akustik, DAGA '05, 31. Jahrestagung für Akustik (Deutsche Gesellschaft für Akustik), München 2005

Capek, „Die Erregung von Eigentönen gedämpfter Räume durch kurzzeitige Impulse“ Gravesaner Blätter 1956, no. 4, S.57

Celestinos et al., "Optimizing placement and equalization of multiple low frequency loudspeakers in rooms", Audio Engineering Society Preprint 6545 (2005)

Celestinos et al., "Low frequency sound field enhancement system for rectangular rooms using multiple low frequency loudspeakers, Audio Engineering Society Preprint 6688 (2006)

Celestinos et al., "Low-frequency loudspeaker-room simulation using finite differences in the time domain – Part 1: Analysis", J. of the Audio Engineering Society 2008, S.772

Celestinos et al., "Controlled acoustic bass system (CABS), a method to achieve uniform sound field distribution at low frequencies in rectangular room", J. of the Audio Engineering Society 2008, S.915

Cox et al., "Room sizing and optimization at low frequencies", J. of the Audio Engineering Society 2004, S.640

Davy, "The variance of decay rates at low frequencies", Applied Acoustics 1988, vol. 23, S. 63

Fazenda et al., "Difference Limen for the Q factor of Room Modes," Audio Engineering Society Preprint 5905 (2003)

Fazenda et al., "Perception of low frequencies in small rooms", Proceedings of the European Acoustics Symposium, September 2004, Guimaraes, Portugal

Fazenda et al., "Perception of modal distribution in critical listening spaces", Proceedings of the 11th International Conference on Sound and Vibration, July 2004, St. Petersburg, Russland

Fazenda et al., "Perception of modal distribution metrics in critical listening spaces - Dependence on room aspect ratios", J. of the Audio Engineering Society 2005, S.1128

Fazenda et al., "Optimal modal spacing and density for critical listening", Audio

Engineering Society Preprint 7584 (2008)

Fazenda et al., "Subjective preference of modal control in listening rooms ", Audio Engineering Society Preprint 8312 (2010)

Ferekidis et al., "The beneficial coupling of cardioid low frequency sources to the acoustic of small rooms", Audio Engineering Society Preprint 6110 (2004)

Fuchs, "Zur Absorption tiefer Frequenzen in Tonstudios", Rundfunktechnische Mitteilungen 1992, vol. 36, no. 1, S.1

Fuchs et al., "Qualifying freefield and reverberation rooms for frequencies below 100 Hz" Applied Acoustics 2000, vol. 59, S.303

Geddes et al, "Finite element approximation for low-frequency sound in a room with absorption", J. of the Acoustical Society of America 1988, vol. 83, no. 4, S.1431

Goertz et al., "Optimierung der Tiefotonwiedergabe in Tonstudios und Abhörräumen", Fortschritte der Akustik, DAGA '03, (Deutsche Gesellschaft für Akustik), 2003, S.196

Goldberg, "Finding the audibility of the temporal decay rate of a low frequency room mode" (2005)

<http://www.acoustics.hut.fi/asf/publicat/akup05/goldberg.pdf>

Goldberg, "Measuring the threshold of audibility of temporal decays", Audio Engineering Society Preprint 6823 (2006)

Griesinger, "Loudspeaker and listener positions for optimal low-frequency spatial reproduction in listening rooms", 149th Meeting of the Acoustical Society of America, Vancouver, Kanada, 16.-20. Mai 2005, paper 1pMU2

Harwood et al. (1964), "Stereophony: the Effect of Cross-talk Between Left and Right Channels", BBC Monograph 52

[http://www.bbc.co.uk/rd/pubs/archive/pdffiles/monographs/bbc\\_monograph\\_52.pdf](http://www.bbc.co.uk/rd/pubs/archive/pdffiles/monographs/bbc_monograph_52.pdf)

Hauser et al., "Commercial low frequency absorbers - a comparative study", Audio Engineering Society preprint 7431 (2008)

Hirata,"Dependence of the curvature of sound decay curves and absorption distribution on room shapes", J. of Sound and Vibration 1982, vol. 84, no. 4, S.509

Hirata, "Improving stereo at l.f.", Wireless World 1983, S.60

Jacobsen,"Decay rates and wall absorption at low frequencies", J. of Sound and Vibration 1982, vol. 81, no. 3, S.405

Jacobsen, "Active and reactive sound intensity in a reverberant sound field", J. of Sound and Vibration 1990, vol. 143, no. 2, S.231

Jacobsen, "The sound field in a reverberation room" (2010)  
[http://server.elektro.dtu.dk/ftp/fja/Room\\_acoustics.pdf](http://server.elektro.dtu.dk/ftp/fja/Room_acoustics.pdf)

Karjalainen et al., "Estimation of modal decay parameters from noisy response measurements", Audio Engineering Society preprint 5290 (2001)

Karjalainen et al., "Perception of temporal decay of low-frequency room modes", Audio Engineering Society preprint 6083 (2004)

Karjalainen et al., "About room response equalization and dereverberation", 2005 IEEE Workshop on Applications of Signal Processing to Audio and Acoustics, October 16-19, 2005, New Paltz, NY, USA, S.183

Kelloniemi et al., "Detection of subwoofer depending on crossover frequency and spatial angle between subwoofer and main speaker", Audio Engineering Society Preprint 6431 (2005)

Kleiner et al., "Computer prediction of low-frequency SPL variations in rooms as a function of loudspeaker placement", Audio Engineering Society preprint 3577 (1993)

Knudsen, "Resonances in small rooms", J. of the Acoustical Society of America 1932, S.20

Kügler et al., „Loudspeaker reproduction: study on the subwoofer concept”, Audio Engineering Society Preprint 3335 (1992)

Linkwitz, "Why is bass reproduction from a dipole woofer in a living room often subjectively more accurate than from a monopole woofer", J. of the Audio Engineering Society 2003, S.1062

Maa , "Distribution of eigentones in a rectangular chamber at low frequencies", J. of the Acoustical Society of America 1939, vol. 10, no. 1, S.235

Maluski et al., "Predicted and measured low frequency response of small rooms", J. of Building Acoustics 1997, vol. 4, no. 2, S.73

Maluski et al., "The effect of construction material, contents and room geometry on the sound field in dwellings at low frequencies", Applied Acoustics 2004, vol. 65, S.31

Martens et al., "Identification and discrimination of listener envelopment percepts associated with multiple low-frequency signals in multichannel sound reproduction", Audio Engineering Society Preprint 6229 (2004)

Martens , “The Impact of Decorrelated Low-Frequency Reproduction on Auditory Spatial Imagery: Are Two Subwoofers Better Than One?”, 16th International Conference 1999: Spatial Sound Reproduction, paper 16-006

Mayo, “Standing wave patterns in studio acoustics”, Acustica 1952, vol. 2, no.2, S.49

De Melo et al., “Sound absorption at low frequencies: modelling a test room”, J. of Building Acoustics 2006, vol. 13, no. 2, S.141

De Melo et al., “Sound absorption at low frequencies: room contents as obstacles”, J. of Building Acoustics 2007, vol. 14, no. 2, S.143

De Melo et al., "Finite element model of absorbent furniture in small rooms at low frequencies", 9th International Congress on Sound and Vibration, Orlando, USA, 8.-11. July 2002

De Melo et al., "A finite element model of sound absorption at low frequencies", 4th European Conference on Noise Control, Patras, Griechenland, 14.-17. January 2001

Miller , “Physiological and content considerations for a second low frequency channel for bass management, subwoofers, and LFE”, Audio Engineering Society preprint 6628 (2005)

Morimoto, “Effect of low frequency components on sound image width”, Fortschritte der Akustik, DAGA '86, (Deutsche Gesellschaft für Akustik), S. 467

Morton, “Low Frequency Control and Acoustical Optimising of Small Rooms Using the Schroeder Diffuser”, Audio Engineering Society preprint 4034 (1995)

Noy et al., Low frequency absorbers - applications and comparisons”, Audio Engineering Society, preprint 5944 (2003)

Papadopoulos, “Redistribution of the low frequency acoustic modes of a room: a finite element-based optimisation method”, Applied Acoustics 2001, vol.62, no.11, S.1267

Rizzi et al., “Small studios with gypsum board sound insulation: a review of their room acoustics, details at the low frequencies”, Audio Engineering Society preprint 7467 (2008)

Salava, “Acoustic load and transfer functions in rooms at low frequencies”, J. of the Audio Engineering Society 1988, S.763

Salava, “Low-frequency performance of listening rooms for steady-state and transient signals”, Audio Engineering Society preprint 2901 (1990)

Salava, “Subwoofers in small listening rooms”, Audio Engineering Society preprint 4940

(1999)

Salava , “Imperfections at low frequencies – how much are they audible or annoying?”, Audio Engineering Society preprint 6144 (2004)

Sepmeyer, “Computed frequency and angular distribution of the normal modes of vibration in rectangular rooms”, J. of Acoustical Society of America 1965, vol. 37, no. 3, S.413

Stefanakis, “Source placement for equalization in small enclosures”, J. of the Audio Engineering Society 2008, S.357

Subkey et al., “Localization and image size effects for low frequency sound”, Audio Engineering Society preprint 6325 (2005)

Taylor, “Room modes and sound absorption: some practical measurements compared with theoretical predictions”, BBC RD 1985/11  
<http://downloads.bbc.co.uk/rd/pubs/reports/1985-11.pdf>

Taylor, “A preliminary study of the influence of room mode structure on sound absorption”, BBC RD 1983/4  
<http://downloads.bbc.co.uk/rd/pubs/reports/1983-04.pdf>

Voetman et al, “Review of the low-frequency absorber and its application to small room acoustics”, Audio Eng. Society preprint 3578 (1993)

Wankling et al., “Subjective validity of figures of merit for room aspect ratio designs”, Audio Eng. Society preprint 7746 (2009)

Walker, “Low-frequency room responses: Part 1 -- Background and qualitative considerations, “BBC RD 1992/8  
<http://downloads.bbc.co.uk/rd/pubs/reports/1992-08.pdf>

Walker, “Low-frequency room responses: Part 2 -- Calculation methods and experimental results”, BBC RD 1992/9  
<http://downloads.bbc.co.uk/rd/pubs/reports/1992-09.pdf>

Walker, “Room modes and low frequency response in small enclosures”, Audio Engineering Society preprint 4194 (1996)

Ward et al., “The effect of rooms on multiple loudspeaker loading”, Audio Engineering Society preprint 4413 (1997)

Welti, “How many subwoofers are enough”, Audio Engineering Society preprint 5602 (2002)

Welti, “In-room low frequency optimization”, Audio Engineering Society preprint 5942 (2003)

Welti, “Subjective comparison of single channel versus two channel subwoofer reproduction”, Audio Engineering Society preprint 6322 (2004)

Welti, “Low-frequency optimization using multiple subwoofers”, J. of the Audio Engineering Society 2006, p.347

Welti, “Investigation of Bonello criterion for use in small room acoustics”, Audio Engineering Society preprint 7849 (2009)

Xiaotian et al., “Using optimized surface modifications to improve low frequency response in a room”, Applied Acoustics 2004, vol. 65, S.841

Xiaotian et al., “Validation of an optimization procedure to improve low frequency characteristics of rooms”, Applied Acoustics 2006, vol. 67, S.529

Zhu et al., “Using optimized surface modifications to improve low frequency response in a room”, Applied Acoustics 2004, vol. 65, S.841

Zhu et al., “Validation of an optimization procedure to improve low frequency characteristics of rooms”, Applied Acoustics 2006, vol. 67, S.529

## Raumabmessungen

Blaszak, “Acoustic design of small rectangular rooms: normal frequency statistics”, Applied Acoustics 2008, vol. 69, S.1356

Bolt, “Note on normal frequency statistics in rectangular rooms”, J. of the Acoustical Society of America 1946, vol. 18, no. 1, S.130

Bonello, “A new criterion for the distribution of normal room modes”, Journal of the Audio Engineering Society 1981, S.597

Cox et al., “Determining optimum room dimensions for critical listening environments: a new methodology”, Audio Engineering Society preprint 5353 (2001)

Cox et al., “Room sizing and optimization at low frequencies”, J. of the Audio Engineering Society 2004, S.640

Louden, “Dimension ratios of rectangular rooms with good distribution of eigentones”, Acustica 1971, vol. 24, S. 101

Sepmeyer, “Computed frequency and angular distribution of the normal modes of vibration in rectangular rooms”, J. of Acoust. Soc. of America 1965, vol. 37, no.3, p.413

Walker, "Optimum dimension ratios for small rooms", Audio Engineering Society preprint 4191 (1996)

Welti, "Investigation of Bonello criterion for use in small room acoustics", Audio Engineering Society preprint 7849 (2009)

## Nicht-rechteckige Räume

Bolt et al., "Perturbation of sound waves in irregular rooms", J. of the Acoustical Society of America 1942, vol. 13, S.65

Bolt, "Normal modes of vibration in room acoustics: experimental investigations in nonrectangular enclosures", J. of the Acoustical Society of America 1939, vol. 11, S.184

Easwaran et al., "On further validation and use of the finite element method to room acoustics", J. of Sound and Vibration 1995, vol. 187, no. 2, S.195

Feshbach et al., "Perturbations of boundary conditions", Physical Review, vol. 59, 15. Jan. 1941, S.189

Hirata,"Dependence of the curvature of sound decay curves and absorption distribution on room shapes", J. of Sound and Vibration 1982, vol. 84, no. 4, S.509

Hong, "Natural mode analysis of hollow and annular elliptical cylindrical cavities", J. of Sound and Vibration 1995, vol. 183, no. 2, S.327

Markovic et al., "Determination of complex resonant frequencies in rectangular and circular cylindrical rooms", Applied Acoustics 2000, vol. 59, S.265

Milner, "An investigation of the modal characteristics of nonrectangular reverberation rooms", J. of the Acoustical Society America 1989, vol.85, S.772

Nimura et al., "The effect of room shape on the steady-state transmission characteristics (I): Theoretical consideration on fan-shaped room", J. of the Acoustical Society of Japan 1954, vol. 10, S. 245

Nimura et al., "The effect of room shape on the steady-state transmission characteristics (II): The experimental investigation using model rooms", J. of the Acoustical Society of Japan 1954, vol. 10, S. 250

Sato et al., "The effect of room shape on the sound field in rooms", Journal of the Physical Society of Japan 1959, vol. 14, no. 3, S.365

Van Nieuwland, "Eigenmodes in non-rectangular reverberation rooms", Noise control engineering Nov. 1979, S.112

## Nachhall

Benton, "Effects of reverberation on sound source localization using binaural spectral cues", Proceedings of the 23<sup>rd</sup> IASTED International Conference, MODELLING, IDENTIFICATION, AND CONTROL, 23.-25. Febr. 2004, Grindelwald, Schweiz, S. 547

Blesser, "An interdisciplinary synthesis of reverberation viewpoints", J. of the Audio Engineering Society 2001, S.867

Burgess et al., "Reverberation times in British living rooms", Applied Acoustics 1985, vol. 18, S.369

Davy, "The variance of reverberation time measurements due to loudspeaker position variation", J. of Sound and Vibration 1988, vol. 132, no. 3, S.403

Diaz, "The reverberation time of furnished rooms in dwellings", Applied Acoustics 2005, vol. 66, S.945

Hirata, "Reverberation times of listening room and the definition of reproduced sound", Acustica 1978, vol. 41, S.222

Hirata et al., "Optimum reverberation times of monitor rooms and listening rooms", Audio Engineering Society preprint 1730 (1981)

Jan, "Invited review paper: the physics of reverberation", Building Acoustics 2004, vol. 11, no. 2, S.81

Karjalainen et al., "More about this reverberation science: perceptually good late reverberation", Audio Engineering Society preprint 5415 (2001)

Kuttruff, "Nachhall und effektive Absorption in Räumen mit diffuser Wandreflexion", Acustica 1976, vol. 35, no.3. S.141

Kuttruff, "Eigenschaften und Auswertung von Nachhallkurven", Akustische Beihefte 1958, no. 1, S.273

Kuttruff, "Energetic sound propagation in rooms", Acustica – acta acustica 1997, vol.83, S.622

Larsen, "Reverberation process at low frequencies", Brüel and Kjaer Technical Review 1978, no.4, S.3 - 33

Lipshitz et al., "Experiments in direct/reverberation ratio modification", Audio Engineering Society preprint 2301 (1985)

Meng et al., "The just noticeable difference of noise length and reverberation perception", International Symposium on Communications and Information Technologies, ISCIT '06, 20. Sept. 2006, S.418

Nelson, "Reverberation time measurements in small sound-absorbing enclosures: shortcomings and alternatives", National Conference on Noise Control Engineering Noise-Con. 1991, Tarrytown, New York, USA

Newell et al., "Control room reverberation is unwanted noise", Proceedings of the Institute of Acoustics 1994, vol. 16, pt.4, S.365

Niaounakis et al., "Perception of reverberation time in small listening rooms", J. of the Audio Engineering Society 2002, S.343

Oelmann et al., "Zur Messung von "Nachhallzeiten" bei geringer Eigenfrequenzdichte", Rundfunktechnische Mitteilungen 1986, vol. 30, no. 6, S.257

Plenge, "Über die Hörbarkeit kleiner Änderungen der Impulsantwort eines Raumes", Acustica 1971, vol.25. no.5, S. 315

Plenge, "Über die Hörbarkeit von Änderungen im Frequenzgang der Nachhallzeit", Acustica 1965/66, vol. 16, S.269

Reichardt et al, „Abhängigkeit der Grenzen zw. brauchbarer und unbrauchbarer Durchsichtigkeit von der Art des Musikmotivs, der Nachhallzeit und der Nachhalleinsatzzeit“, Applied Acoustics 1974, vol. 7, S.243

Reichardt et al., „Die hörbaren Stufen des Raumeindruckes bei Musik“, Acustica 1966, vol. 17, S.175

Toole, "Loudspeakers and rooms for sound reproduction – a scientific review", J. of the Audio Engineering Society 2006, S.451  
<http://www.harman.com/EN-US/OurCompany/Technologyleadership/Pages/ScientificPublications.aspx?CategoryID=Scientific%20Publications>

## Schallfeld

Bolt, "Frequency fluctuations in rooms", J. of the Acoustical Society of America 1950, vol.22, no. 2, S.280

Baskind et al., "Sound power radiated by sources in diffuse field", Audio Engineering Society preprint 5146 (2000)

D'Antonio et al., "Sound intensity and interaural cross-correlation measurements using time-delay spectrometry", J. of the Audio Engineering Society 1989, S.659

Geddes, "Small room acoustics in the statistical region", Audio Engineering Society 15th International Conference 1998: Audio, Acoustics & Small Spaces

Gibbs et al., "A simple method for calculating the distribution of sound pressure levels within enclosures", Acustica 1972, vol.26, S.24

Gover et al., "Measurements of directional properties of reverberant sound fields in rooms using a spherical microphone array", J. of the Acoustical Society of America 2004, vol. 116, no. 4, pt.1, S.2138

Guy et al., "A measurement system and method to investigate the directional characteristics of sound field in enclosures", Noise Control Engineering 1994, vol. 42, no. 1, S.8

Hodgson, "When is diffuse-field theory applicable?" Applied Acoustics 1996, vol. 49, no.3, S.197

Jacobsen, "Active and reactive sound intensity in a reverberant sound field", J. of Sound and Vibration 1990, vol. 143, no. 2, S. 231

Jacobsen, "The sound field in a reverberation room" (2010)  
[http://server.elektro.dtu.dk/ftp/fja/Room\\_acoustics.pdf](http://server.elektro.dtu.dk/ftp/fja/Room_acoustics.pdf)

Kuttruff, "Energetic sound propagation in rooms", Acustica – acta acustica 1997, vol.83, S.622

Kuttruff, "Sound fields in small rooms", Audio Engineering Society 15th International Conference 1998: Audio, Acoustics & Small Spaces

Loutridis, "A study on the temporal evolution and sound-field homogeneity in small rooms", J. of the Audio Engineering Society 2009, S. 195

Loutridis, "Quantifying sound-field diffuseness in small rooms using multifractals", J. of the Acoustical Society of America 2009, vol. 125, no. 3, S.1498

Merimaa et al., "Measurement, analysis and visualisation of directional room responses", Audio Engineering Society preprint 5449 (2001)  
Meyer, „Definition and diffusion in rooms“, J. of the Acoustical Society of America 1954, vol. 26, no. 5, S.630

Nélisse, "Characterisation of a diffuse sound field in a reverberant room", J. of the Acoustical Society of America 1997, vol. 101, no. 6, S.3517

Peacock et al., "Sound-pressure response measurement in small rooms over a finite region", J. of the Acoustical Society of America 1995, vol. 98, no. 6, S.3279

Pietrzkyk, „Computer modeling of the sound field in small rooms“, Audio Engineering Society 15th International Conference 1998: Audio, Acoustics & Small Spaces

Prokofieva, "Relation between correlation characteristics of sound field and width of listening location", Audio Engineering Society preprint 7089 (2007)

Rafaely, "Spatial-temporal correlation of a diffuse sound field", J. of the Acoustical Society of America 2000, vol. 107, no. 6, S.3254

Randall et al., "Diffusion of sound in small rooms", Proceedings of the IEEE 1960, Part B, vol. 107, no. 35, S.439

Schroeder, "On frequency response curves in rooms. Comparison of experimental, theoretical and Monte Carlo results for the average frequency spacing between maxima", J. of the Acoustical Society of America 1962, vol. 34, no. 1, S.76

Schroeder, " Statistical parameters of the frequency response curves in large rooms", J. of the Audio Engineering Society 1987, S. 299

Schroeder, "The Schroeder frequency revisited", J. of the Acoustical Society of America 1996, vol.99, no. 5, S. 3240

Schultz, "Diffusion in reverberation rooms", J. of Sound and Vibration 1971, S.17

Spring et al., "The measurement of sound diffusion index in small rooms", BBC RD 1969/16

<http://downloads.bbc.co.uk/rd/pubs/reports/1969-16.pdf>

Stumpner et al., "Berechnungen des Schallfeldes im Studio", Rundfunktechnische Mitteilungen 1999, vol. 43, no. 1, S.11

Thiele, "Richtungsverteilung und Zeitfolge der Schallrückwürfe in Räumen", Acustica 1953, vol. 3, S.291

Vorländer, "Objective characterisation of sound fields in small rooms", Audio Engineering Society 15th International Conference 1998: Audio, Acoustics & Small Spaces

Vorländer, "Geometrische Akustik in kleinen Räumen", Fortschritte der Akustik, DAGA '02, 28. Jahrestagung für Akustik (Deutsche Gesellschaft für Akustik), Bochum 2002

# **Psychoakustik**

Ando, "Formulae describing subjective attributes for sound fields based on a model of the auditory-brain system", J. of Sound and Vibration 2000, vol. 232, no. 1, S.101

Bloom, "Creating source elevation illusions by spectral manipulation", J. of the Audio Engineering Society 1977, S.560

Bronkhorst et al., "Auditory distance perception in rooms", Nature 1999, vol. 397, S.517

Bilsen et al., "The minimum integration time of the auditory system", Audio Engineering Society preprint 2746 (1989)

Butler, "Spectral cues utilized in the localization of sound in the median sagittal plane", J. of the Acoustical Society of America 1977, vol. 61, no. 5, S.1264

Coleman, "An analysis of cues to auditory depth perception in free space", Psychological Bulletin 1963, vol. 60, no. 3, S.302

Evans, "Obtaining accurate response in directional listening tests", Audio Engineering Society preprint 4730

Fletcher, "Auditory patterns", Reviews of Modern Physics 1940, vol. 12, S. 47

Hameed et al., "Psychoacoustic cues in room size perception", Audio Engineering Society preprint 6084 (2004)

Harima et al., "Influence of visual stimuli on the precedence effect in sound localization", Acoustical Science and Technology 2009, vol. 30, no. 4, S.240

Hartmann, "Auditory localization in rooms", Audio Engineering Society 12<sup>th</sup> International Conference 1993

Hartmann, "Localization of sound in rooms", J. of the Acoustical Society of America 1983, vol. 74, no. 5, S.1380

Hartmann et al., "Localization of sound in rooms, II: The effects of a single reflecting surface", J. of the Acoustical Society of America 1985, vol.78, S.524

Hartmann et al., "Localization of sound in rooms III: Onset and duration effects", J. of the Acoustical Society of America 1986, vol. 80, no. 6, S.1695

Hartmann et al., "Localization of sound in rooms IV: The Franssen effect", J. of the Acoustical Society of America 1989, vol. 86, no. 4, S.1366

Lehnert, "Auditory spatial impression", Audio Engineering Society 12<sup>th</sup> International Conference 1993, paper 12-005

Litovsky et al., "The precedence effect", J. of the Acoustical Society of America 1999, vol. 106, no. 4, pt. 1, S.1633

Mills, "On the minimum audible angle", J. of the Acoustical Society of America 1958, vol. 30, no. 4, S.237

Moore, "Characterisation of simultaneous, forward and backward masking" Audio Engineering Society 12<sup>th</sup> International Conference 1993

Nakayama, "Preferred time delay of a single reflection for performers", Acustica 1984, vol. 54, S. 217

Nielsen, "Auditory distance perception in different rooms", J. of the Audio Engineering Society 1993, S.755

Nielsen, "Depth perception – finding a design goal for sound reproduction", Audio Engineering Society preprint 3069 (1991)

Noxon, "Sound Fusion and the Acoustic Presence Effect", Audio Engineering Society preprint 2998 (1990)

Rakerd et al., "Localization of sound in rooms, II: The effects of a single reflecting surface", J. of the Acoustical Society of America 1985, vol.78, S.524

Rakerd et al., "Localization of sound in rooms, III: Onset and duration effects", J. of the Acoustical Society of America 1986, vol.80, S.1695

Roffler et al., "Factors that influence the localization of sound in the vertical plane", J. of the Acoustical Society of America 1968, vol. 43, no. 6, S.1255

Roffler et al., "Localization of tonal stimuli in the vertical plane", J. of the Acoustical Society of America 1968, vol. 43, no. 6, S.1260

Searle et al., "Binaural disparity: another auditory localisation cue", J. of the Acoustical Society of America 1975, vol. 57, no. 2, S.448

Shaw. "Ear canal pressure generated by a free sound field", J. of the Acoustical Society of America 1965, vol. 39, no.3, S.465

Viemeister, "An Overview of Psychoacoustics and Auditory Perception", Audio Engineering Society 8th International Conference 1990: The Sound of Audio

Wolf, "Untersuchungen zum Gesetz der ersten Wellenfront", Fortschritte der Akustik, DAGA '88 (Deutsche Gesellschaft für Akustik), S. 605

Supin et al., "Frequency resolving power of the human's hearing", Neuroscience Letters 1994, vol. 165, S.195

Toledo et al., „The role of spectral features in sound localization”, Audio Engineering Society preprint 7450 (2008)

Woszczyk et al., "The audibility of spectral precedence", Audio Engineering Society preprint 3353 (1992)

Zahorik, "Direct-to-reverberant energy ratio sensitivity", J. of the Acoustical Society of America 2002, vol. 112, no. 5, pt. 1, S.2110

Zwicker, "Critical band width in loudness summation", J. of the Acoustical Society of America 1957, vol. 29, no. 5, S.548

## Studiokontrollräume

Arato-Borsi, "Some aspects of control room acoustics", Audio Engineering Society preprint 3850 (1994)

Arato-Borsi, "New reference listening room for two-channel and multichannel stereophonic", Audio Engineering Society preprint 4732 (1998)

Augspurger, "Loudspeakers in control rooms and living rooms", Audio Engineering Society 8<sup>th</sup> International Conference 1990: The Sound of Audio

Borenius et al., "Standardized listening conditions in sound control rooms", Audio Engineering Society preprint 1332 (1978)

Borsi et al., "New reference listening room for 2-channel and multichannel stereophonic", Audio Engineering Society preprint 4732 (1998)

Christensen, "A Practical Guide to Acoustical Design of Control Rooms and Placement of Loudspeakers", Audio Engineering Society preprint 4252 (1996)

D'Antonio et al., "The RFZ/RPG approach to control room monitoring", Audio Engineering Society preprint 2157 (1984)

Davis et al., "The LEDE concept for the control of acoustic and psychoacoustic parameters in recording control rooms", J. of the Audio Engineering Society 1980, S.585

Davis et al., "History and development of the LEDE control room concept", Audio Engineering Society preprint 1954 (1982)

Davis, "The role of the initial time delay gap in the acoustic design of control rooms for recording or reinforcing systems", Audio Engineering Society preprint 1547 (1979)

Dekker, "Audio control room design", Audio Engineering Society preprint 2681 (1988)

Farrell, "Room acoustics of studios", J. of the Audio Engineering Society 1971, S.34

Fazenda et al., „The views of recording studio control room users“, Proceedings of the Institute of Acoustics 2001, vol. 23, pt.8, S. 213

Fürjes et al., "New approach to design control rooms and studios", Audio Engineering Society preprint 5149 (2000)

Gilford, "The acoustic design of talk studios and listening rooms", J. of the Audio Engineering Society 1979, S.17

Heringa et al., "Design of small control rooms with broadband frequency response", Audio Engineering Society preprint 2631 (1988)

Hoeg, "Listening conditions for subjective assessment of sound quality: the status of international standardization", Audio Engineering Society preprint 3788 (1994)

Ivancevic et al., "Acoustical properties of control rooms", Audio Engineering Society preprint 4424 (1997)

Järvinen et al., "Design of a reference listening room-a case study", Audio Engineering Society preprint 4630 (1997)

Mäkivirta et al., "The Quality of Professional Surround Audio Reproduction, A Survey Study", AES 19th International Conference 2001: Surround Sound - Techniques, Technology, and Perception, Paper Number 1914

Molero Milan, "Requirements to acoustically prepare a recording studio", Audio Engineering Society preprint 6502 (2005)

Morton, "Early sound field control in critical listening areas", Audio Engineering Society preprint 4313 (1996)

Newell et al., "A proposal for a more perceptually uniform control stereophonic music recording studio", Audio Engineering Society preprint 4580 (1997)

Putnam, "A 35 year history and evolution of the recording studio", Audio Engineering Society preprint 1661 (1980)

Putnam, "The loudspeaker and control room as a wholly integrated system", Audio

Engineering Society preprint 1858 (1981)

Putnam, "Recording studio and control room facilities of advanced design", J. of the Audio Engineering Society 1960, S.111

Rettinger, "On the acoustics of control rooms", Audio Engineering Society preprint 1261 (1977)

Spikofski, "Zur Bewertung von Schallfeld-Parameter-Unterschieden in Studio-Abhörsituationen", Rundfunktechnische Mitteilungen 2000, vol. 44, no. 1, S.1

Stamac et al., "One-year experience with a rebuilt control room in Maribor", Audio Engineering Society preprint 4426 (1997)

Stumpner et al., "Berechnungen des Schallfeldes im Studio", Rundfunktechnische Mitteilungen 1999, vol. 43, no. 1, S.11

Teuber et al., "Control room acoustics – measurements", Audio Engineering Society preprint 2899 (1990)

Toole, "Art and science in the control room", Proceedings of the Institute of Acoustics 2003, vol. 25, pt.8, S. 43

Torres-Guijarro et al., "Objective evaluation of a non-environment control rooms for 5.1 surround listening", Audio Engineering Society preprint 7465 (2008)

Toyoshima et al., "Control room acoustic design", Audio Engineering Society preprint 2325 (1986)

Veale, "The environmental design of a studio control room", Audio Engineering Society preprint A-2 (1973)

Voetmann, "50 years of sound control room design", Audio Engineering Society preprint 7140 (2007)

[http://www.madebydelta.com/imported/images/DELTA\\_Web/documents/TC/acoustics/av126205.pdf](http://www.madebydelta.com/imported/images/DELTA_Web/documents/TC/acoustics/av126205.pdf)

Völker, "Loudspeaker sound, its propagation and modification by control room acoustics", Audio Engineering Society preprint 1219 (1977)

Völker, "Listening condition in an almost direct sound field", Audio Engineering Society preprint 1314 (1978)

Völker, "Control rooms for music monitoring" Audio Engineering Society preprint 1958 (1983)

Völker, "Acoustical design for control rooms for speech and music monitoring" Audio

Engineering Society preprint 2002 (1983)

Völker, „Frühe Schallanteile bei Aufnahme und Wiedergabe sowie raumakustische Konsequenzen für den Studiobau“, Fortschritte der Akustik, DAGA '97, 23. Jahrestagung für Akustik (Deutsche Gesellschaft für Akustik), Kiel 1997

Völker, “The importance of early sound reflections for recording and reproduction – is the quality of digital sound transmission sufficient?” Audio Engineering Society preprint 4579 (1997)

Völker, “Acoustics in control rooms – that recurring, burdensome subject”, Audio Engineering Society preprint 4832 (1998)

Völker, “Absorption and reflections – useful tools in room acoustical design”, Audio Engineering Society preprint 4982 (1999)

Volkmann, “Acoustic requirements of stereo recording studios”, J. of the Audio Engineering Society 1966, S.324

Walker, “A preliminary investigation into the measurement of time and frequency response of listening rooms and control cubicles”, BBC RD 1979/9

<http://downloads.bbc.co.uk/rd/pubs/reports/1979-09.pdf>

Walker, “A new approach to the design of control room acoustics for stereophony”, Audio Engineering Society preprint 3543 (1993)

Walker, “A controlled-reflection listening room for multi-channel sound”, Audio Engineering Society preprint 4645 (1998)

Wrightson et al., “Psychoacoustic considerations in the design of studio control rooms”, J. of the Audio Engineering Society 1986, S. 789

Wrightson et al., “Influence of rear-wall reflection patterns in LEDE-type recording studio control rooms”, J. of the Audio Engineering Society 1986, S.796

## Equalizer

Antsalo et al., “Comparison of modal equalization design methods”, Audio Engineering Society preprint 5844 (2003)

Avis, “IIR Biquad Controllers for Low Frequency Acoustic Resonance” Audio Engineering Society preprint 5474 (2001)

Avis, “Q-factor modification for low-frequency room modes”, Audio Engineering Society 21st International Conference: Architectural Acoustics and Sound Reinforcement (June 2002), paper no. 58

Bauck, “Equalization for central phantom images and dependence on loudspeaker spacing”, Audio Engineering Society preprint 5240 (2000)

Celestinos et al., “Optimizing placement and equalization of multiple low-frequency loudspeakers in rooms”, Audio Engineering Society preprint 6545 (2005)

Craven et al., “Practical adaptive room and loudspeaker equalizer for hi-fi use”, Audio Engineering Society preprint 3346 (1992)

Doeven et al., “Equalization of loudspeaker low frequency response in a room”, Audio Engineering Society Preprint 3821 (1994)

Elliott et al., “Multiple-point equalization in a room using adaptive digital filters”, J. of the Audio Engineering Society 1989, S.899

Fielder, “Practical limits for room equalization”, Audio Engineering Society preprint 5481 (2001)

Fielder, “Analysis of traditional and reverberation-reducing methods of room equalization”, J. of the Audio Engineering Society 2003, S.3

Haneda et al., “Multiple-point equalisation of room transfer functions by using common acoustical poles”, IEEE Transactions on speech and audio processing 1997, vol. 5, no.4, S.325

Hatziantoniou et al., “Time-frequency mapping based on non-uniform smoothed spectral representations”, IEEE International Conference on Acoustics, Speech, and Signal Processing, Phoenix, AZ, USA, 15-19 March 1999, Proceedings, vol. 3, S.1425-1428

Hatziantoniou et al., “Generalized fractional-octave smoothing of audio and acoustic responses”, J. of the Audio Engineering Society 2000, S.259

Hatziantoniou et al., “Results for room acoustics equalization based on smoothed responses” Audio Engineering Society preprint 5779 (2003)

Hatziantoniou et al., “Error in real-time room acoustics dereverberation”, J. of the Audio Engineering Society 2004, S.883

Holman et al., “First results from a large-scale measureemnt program for home theaters”, Audio Engineering Society preprint 8310 (2010)

Howe et al., “Methods of local room equalization and their effect over the listening area”, Audio Engineering Society preprint 3138 (1991)

Johansen et al., “Listening test results from a new loudspeaker/room correction system”, Audio Engineering Society preprint 5323 (2001)

Johansen et al., “The excess phase in loudspeaker/room transfer functions: Can it be ignored in equalization tasks?”, Audio Engineering Society preprint 4181 (1996)

Johnston et al., “A low complexity perceptually tuned room correction system”, Audio Engineering Society preprint 7263 (2007)

Karjalainen et al., “Modal equalization by temporal shaping of room response”, 23rd International Conference 2003: Signal Processing in Audio Recording and Reproduction

Kendrick et al., “Room acoustic parameter extraction from music signals”, Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing, Toulouse (Frankreich), 14.-19. Mai 2006, vol. 5, S.801

Kim et al., “Room equalization based on acoustic and human perceptual features”, Audio Engineering Society preprint 7026 (2007)

Kuttruff, “On the audibility of phase distortions in rooms and its significance for sound reproduction and digital simulation in room acoustics”, Acustica 1991, vol. 74, S.3

Mäkivirta et al., “Low-frequency modal equalization of loudspeaker-room responses”, Audio Engineering Society preprint 5480 (2001)

Mäkivirta et al., “Modal equalisation of loudspeaker-room responses at low frequencies”, J. of the Audio Engineering Society 2003, S.324

Mourjopoulos, “On the variation and invertibility of room impulse response functions”, J. of Sound and Vibration 1985, vol. 102, no. 2, S.217

Mourjopoulos et al., “Pole and zero modeling of room transfer functions”, J. of Sound and Vibration 1991, vol. 146, no. 2, S.281

Mourjopoulos et al., “A vector quantization approach for room transfer function classification, IEEE International Conference on Acoustics, Speech & Signal Processing, 14. – 17. Mai 1991, New York, USA, vol. 2, conf. 16, S. 3593-3596

Mourjopoulos, “Digital equalization of room acoustics”, J. of the Audio Engineering Society 1994, S.884

Mourjopoulos, “  
Munshi, “Equalizability of room acoustics” IEEE International Conference on Acoustics,

Speech, and Signal Processing, ICASSP-92., 23.-26. März 1992, Vol.2, S.217

Ocleo-Brown, "Pole-zero analysis of the soundfield in small rooms at low frequencies", Audio Engineering Society preprint 6986 (2006)

Olive, "Comparison of Loudspeaker-Room Equalization Preferences for Multichannel, Stereo, and Mono Reproductions: Are Listeners More Discriminating in Mono?", Audio Engineering Society preprint 7492 (2008)

Olive et al., "The subjective and objective evaluation of room correction products", Audio Engineering Society preprint 7960 (2009)

Peacock et al., "Sound-pressure response measurement in small rooms over a finite region", J. of the Acoustical Society of America 1995, vol. 98, no. 6, S.3279

Pedersen et al., "The distribution of the low frequency sound field and its relation to room equalisation", Audio Engineering Society preprint 3852 (1994)

Pedersen, "Loudspeaker-room adaptation for a specific listening position using information about the complete sound field", Audio Engineering Society preprint 6908 (2006)

Pedersen, "Natural timbre in room correction systems", Audio Engineering Society Preprint 7112 (2007)

Pedersen, "Natural timbre in room correction systems (part II)", 32nd International Conference 2007: DSP for Loudspeakers

Pedersen, "Sampling the energy in a 3D sound field", Audio Engineering Society preprint 7261 (2007)

Radlovic et al., "On the poor robustness of sound equalization in reverberant environments", IEEE International Conference on Acoustics, Speech, and Signal Processing, 15.-19. März 1999, Proceedings vol.2, S.881

Radlovic et al., "Equalization in an acoustic reverberant environment: robustness results", IEEE Transactions on Speech and Audio Processing, vol.8, no. 3, Mai 2000, S.311

Radlovic et al., "Nonminimum-phase equalization and its subjective importance in room acoustics", IEEE Transactions on Speech and Audio Processing, vol. 8, no. 6, Nov. 2000, S.728

Santillán et al., "Experimental implementation of a low-frequency global sound equalization method based on free field propagation", Applied Acoustics 2007, vol.68, no.10, S.1063

Santillán, “Spatially extended sound equalisation in rectangular rooms”, J. of the Acoustical Society of America 2001, vol. 110, no.4, S.1989

Sarris et al., “Sound equalization in a large region of a rectangular enclosure”, J. of the Acoustical Society of America 2004, vol. 116, no.6, S.3271

Sarris et al., “Time frequency analysis, modeling and equalization of room impulse response functions”, Audio Engineering Society preprint 5826 (2003)

Schuck et al., “Perception of perceived sound in rooms: some results of the Athena project”, Audio Engineering Society 12<sup>th</sup> International Conference 1993

Stefanakis, “Power output regularization in global sound equalization”, Journal of the Acoustical Society of America 2008, vol. 123, No.1, S.33

Tsakiris et al., “Objective and subjective evaluation of digital equalization systems - measurements of resonances and colorations”, Audio Engineering Society preprint 6463 (2005)

Vanderkooy, “Multi-source room equalization: reducing room resonances”, Audio Engineering Society preprint 7262 (2007)

Walker, “Equalisation of room acoustics and adaptive systems in the equalisation of small room acoustics”, Audio Engineering Society 15th International Conference 1998: Audio, Acoustics & Small Spaces, paper 15-005

Wilson et al., “The loudspeaker –room interface – controlling excitation of room modes”, Audio Engineering Society 23<sup>rd</sup> International Conference (2003)

Worley et al., “Subjective assessments of real-time room dereverberation and loudspeaker equalization”, Audio Engineering Society preprint 6461 (2005)

## Frühe Reflexionen

Ahnert, “Comb-filter distortion and their perception in sound reinforcement systems”, Audio Engineering Society preprint 2565 (1988)

Allen et al., ”Image method for efficiently simulating small-room acoustics”, J. of the Acoustical Society of America 1979, vol. 66, no. 4, S.943

Ando et al., “Effects of early multiple reflections on subjective preference judgements of music sound fields”, Journal of the Acoustical Society of America 1979, vol. 65, No.2, S.524

Ando et al., “Subjective preference of sound with a single early reflection”, Acustica 1977, vol. 37, S.111

Ando et al., "Perception of coloration in sound fields in relation to the autocorrelation function", Journal of the Acoustical Society of America 1982, vol. 71, No.3, S.616

Ando, "Subjective preference of sound fields", DAGA '76, S.259

Ando, "Subjective preference in relation to objective parameters of music sound fields with a single echo", J. of the Acoustical Society of America 1977, vol. 62, no.6, S.1463

Ando, "Architectural Acoustics", Kapitel "Design of electroacoustic systems", Springer Verlag 1998

Ando, "Formulae describing subjective attributes for sound fields based on a model of the auditory-brain system", J. of Sound and Vibration 2000, vol. 232, no. 1, S.101

Angus, "The reflection full zone", Proceedings of the Institute of Acoustics 1996, vol. 18, pt.8, S.235

Angus, "Frequency response effects of specular versus diffuse reflections", Proceedings of the Institute of Acoustics 1998, Vol. 20, Part 5, S.83

Angus, "The effects of specular vs diffuse reflections on the frequency response at the listener", J. of the Audio Engineering Society 2001, S.125

Atal et al., "Perception of coloration in filtered Gaussian noise – short-time spectral analysis by the ear", 4th Int. Congress on Acoustics, Kopenhagen, 21.-28. August 1962

Bareham, "Measurement of spatial characteristics of sound reproduced in listening spaces", Audio Engineering Society preprint 4381 (1996)

Barron, "The subjective effects of first reflections in concert halls – the need for lateral reflections", Journal of Sound and Vibration 1971, Vol.15, No.4, S.475

Barron, "Spatial impression due to early lateral in concert halls: the derivation of a physical measure", Journal of Sound and Vibration 1981, Vol.77, No.2, S.211

Bech, "Perception of reproduced sound: Audibility of individual reflections in a complete sound field", Audio Engineering Society preprint 4195 (1996)

Bech, "Timbral aspects of reproduced sound in small rooms I", J. of the Acoustical Society of America 1995, vol.97, no. 3, S.1717

Bech, "Timbral aspects of reproduced sound in small rooms II", J. of the Acoustical Society of America, vol.99, no. 6, S.3539

Bech, "Spatial aspects of reproduced sound in small rooms", J. of the Acoustical Society of America 1998, vol.103, no. 1, S.434

Bech, "Perception of timbre of reproduced sound in small rooms: influence of room and loudspeaker position", J. of the Audio Engineering Society 1994, S.999

Begault, "Audible and inaudible early reflections: thresholds for auralization system design", Audio Engineering Society preprint 4244 (1996)

Begault et al., "Early reflection thresholds for anechoic and reverberant stimuli within a 3-D sound display", The 18th International Congress on Acoustics, Kyoto, Japan, 4.-9. April 2004

Behrens et al., „Der Kammfilter-Effekt in der Stereophonie“, Fortschritte der Akustik, DAGA '96, 22. Jahrestagung für Akustik (Deutsche Gesellschaft für Akustik), Bonn 1996

Bilsen, "Binaural modeling of spaciousness and coloration", Music and Concert Hall Acoustics, Conference Proceedings from MCHA95, Kirishima International Concert Hall, Japan, Mai 1995, S .327-335, Herausgeber: Y. Ando & D. Noson

Bilsen, "Thresholds of perception of repetition pitch. Conclusions concerning coloration in room acoustics and correlation in the hearing organ", Acustica 1967/68, Vol. 19, S.27

Blauert, "Localization and the law of the first wave front in the median plane", Journal of the Acoustical Society of America 1971, Vol.50, No.2, pt.2, S.466

Blauert, "Auditory spaciousness: some further psychoacoustic analyses", Journal of the Acoustical Society of America 1986, Vol.80, No.2, S.533

Blauert et al., "Acoustic communication: the precedence effect", Forum Acusticum 2005, S.15

Bodden, "Hörereignisausdehnung in Abhängigkeit von Anzahl, Dichte und Einfallsbereich der frühen seitlichen Reflexionen", Fortschritte der Akustik, DAGA 95, Saarbrücken, S.935

Boone et al., "Audibility Thresholds of Spatial Variations in a Single Acoustic Reflection", Audio Engineering Society preprint 5999 (2004)

Bradley et al., "On the importance of early reflections for speech in rooms", Journal of the Acoustical Society of America 2003, Vol.113, No.6, S.3233

Brüggen, "Coloration and binaural decoloration in natural environments", Acustica/acta acustica 2001, vol. 87, S.400

Brüggen, „Wahrnehmung von Klangverfärbungen durch frühe Rückwürfe“, Fortschritte der Akustik, DAGA '2000, 26. Jahrestagung für Akustik (Deutsche Gesellschaft für

Akustik), Oldenburg 2000

Buchholz et al., “Room masking: understanding and modelling the masking of room reflections”, Audio Engineering Society preprint 5312 (2001)

Burgtorf, “Untersuchungen zur Wahrnehmbarkeit verzögerter Schallsignale”, Acustica 1961, vol. 11, S.97

Burgtorf, „Ein Verfahren zur Nachbildung von Schallfeldern in Räumen und zur Untersuchung ihrer subjektiven Wirkung“, 4th International Congress on Acoustics, Kopenhagen, 21.-28. Aug. 1962, Paper M14

Burgtorf et al., “Untersuchungen über die richtungsabhängige Wahrnehmbarkeit verzögerter Schallsignale”, Acustica 1964, vol. 14, S.254

Burgtorf, “Zur subjektiven Wirkung von Schallfeldern in Räumen (Rückverdeckung, Phantomschallquellen)”, Acustica 1963, vol. 13, S.86

Burgtorf et al., „Verdeckung durch subjektiv diffuse Schallfelder“, Acustica 1967/68, vol. 19, S. 72

Case, “An investigation of the spectral effect of multiple early reflections”, Journal of the Acoustical Society of America 2001, Vol. 109, No. 5, S.2003 (Abstract)

Clark, “Measuring audible effects of time delays in listening rooms”, Audio Engineering Society preprint 2012 (1983)

Cox, „Acoustic phase gratings for reduces specular reflections“, Applied Acoustics 2000, vol. 60, S.167

Cox et al., „Room sizing and optimization at low frequencies“, J. of the Audio Engineering Society 2004, S.640

Cremer et al., “Zusammenfassung der Ergebnisse des Colloquiums vom 18.-23. 5. 56“, Gravesaner Blätter 1956, Vol. 2, no. 17, S.17

Damaske et al., “Interaurale Kreuzkorrelation für mehrkanalige Lautsprecherwiedergabe”, Acustica 1972, vol. 27, S.232

Damaske, “Subjektive Untersuchung von Schallfeldern”, Acustica 1967/68, vol. 19, S.190

Devantier, “Characterizing the amplitude response of loudspeaker systems”, Audio Engineering Society preprint 5638 (2002)

Dietsch et al., “Ein objectives Kriterium zur Erfassung von Echostörungen bei Musik-

und Sprachdarbietungen”, Acustica 1986, vol. 60, S.205

Flindell et al., “Subjective evaluations of preferred loudspeaker directivity”, Audio Engineering Society preprint 3076 (1991)

Furlong et al., “Loudspeakers, listening rooms, and effective synthetic auralization”, Audio Engineering Society preprint 3445 (1992)

Gardner, “Image fusion, broadening, and displacement in sound location”, Journal of the Acoustical Society of America 1969, vol. 46, No.2, pt. 2, S.339

Guski, “Auditory localization: effects of reflecting surfaces”, Perception 1990, vol. 19, S.819

Haas, “Über den Einfluss eines einfachen Echos auf die Hörsamkeit von Sprache”, Acustica 1951, vol.1, no.2, S.49

Halmrast, “Comb filters and coloration in music”,

Halmrast, “Sound coloration from (very) early reflections”, Acoustical Society of America, Chicago 4. Juni 2001, Session: The first 80 ms in auditoria

Halmrast, “Orchestral timbre: comb-filter coloration from reflections”, Journal of Sound and Vibration 2000, Vol.232, No.1, S.53

Ähnlicher Artikel: [http://www.akutek.info/Papers/TH\\_Coloration2001.pdf](http://www.akutek.info/Papers/TH_Coloration2001.pdf)

Harris et al., “Stereophonic localization in the presence of boundary reflections, comparing specular and diffuse acoustic radiators”, Audio Engineering Society preprint 4684 (1998)

Harris et al., “Stereophonic localization in rooms, comparing conventional and distributed-mode loudspeakers”, Audio Engineering Society preprint 4794 (1998)

Hartmann et al., “Localization of sound in rooms, II: The effects of a single reflecting surface”, J. of the Acoustical Society of America 1985, vol.78, S.524

Ivancevic, “Acoustical properties of the control rooms”, Audio Engineering Society preprint 4424 (1997)

Jensen et al., “The Importance of Reflections in a Binaural Room Impulse Response”, Audio Engineering Society preprint 5839 (2003)

Johansen, “Listening test results from a new loudspeaker/room correction system”, Audio Engineering Society preprint 5323 (2001)

Kendrick et al., “Room acoustic parameter extraction from music signals”, Proceedings

of the IEEE International Conference on Acoustics, Speech and Signal Processing, Toulouse (Frankreich), 14.-19. Mai 2006, vol. 5, S.801

Kishinaga et al., "On the room acoustic design of listening rooms", Audio Engineering Society preprint 1524 (1979)

Koenig, "Subjective effects in binarual hearing", J. of the Acoustical Society of America 1950, vol. 22, no. 1, S.61

Krumbholz et al., "Mechanism determinng the salience of coloration in echoed sound: influence of interaural time and level differences", J. of the Acoustical Society of America 2004, vol. 115, no. 4, S.1696

Kuhl, "Das Zusammenwirken von direktem Schall, ersten Reflexionen und Nachhall bei der Hörsamkeit von Räumen und bei Schallaufnahmen", Rundfunktechnische Mitteilungen 1965, vol. 9, no. 3, S.170

Kuhl, „Unterschiedliche Bedingungen beim Hören in einem Raum und bei elektroakustischen Übertragungen“, Rundfunktechnische Mitteilungen 1969, vol. 13, no.5, S.205

Kuhl et al., „Einfluss des abgestrahlten Diffusschalls eines Lautsprechers auf das Hörereignis“ Acustica 1978, vol. 40, no.3, S.182

Kuhl, „Hörereignisorte und Wahrnehmungsschwellen verzögerten Schalls bei einkanaliger Übertragung und zweiohrigem Hören“, Acustica 1983, vol. 54, S.97

Kurozumi et al., „The relationship between the cross-correlation coefficient of two-channel acoustic signals and sound image quality”, J. of the Acoustical Society of America 1983, vol. 74, no. 6, S.1726

Kurtovic, "The influence of reflected sound upon speech intelligibility", Acustica 1975, vol. 33, S. 32

Lee et al., "Elicitation and grading of subjective attributes of 2-channel phantom images", Audio Engineering Society preprint 6142 (2004)

Lehmann et al., "Bewertung einer Relexion in Abhängigkeit von der Richtung“, 7. Internationaler Akustik-Kongress, Budapest 1971, S. 753, paper 24-S-17

Lindevald et al., „Two-ear correlation in the statistical sound fields of rooms”, J. of the Acoustical Society of America 1986, vol. 80, no. 2, S.661

Linkwitz, "Room Reflections Misunderstood", Audio Engineering Society preprint 7162 (2007)  
<http://www.linkwitzlab.com/AES'07/AES123-final2.pdf>

Lipshitz et al., "Experiments in direct/reverberation ratio modification", Audio Engineering Society preprint 2301 (1985)

Lochner et al., "The subjective masking of short time delayed echoes by their primary sounds and their contribution to the intelligibility of speech", Acustica 1958, vol. 8, no. 1, S. 1

Lokki et al., "The effect of early reflections on perceived timbre – analyzed with an auditory model", International Conference on Auditory Displays, Kyoto, Japan, 2.-5. Juli 2002

Meyer et al., "Über den Einfluss von Schallrückwürfen auf Richtungslokalisation und Lautstärke bei Sprache", Nachrichten Akademie der Wissenschaften zu Göttingen 1952, Mathematisch-Physikalische Klasse IIa, no. 6, S. 31

Michelsen et al., „Parameters of distance perception in stereo loudspeaker scenario”, Audio Engineering Society preprint 4472 (1997)

Morton, "Early sound field control in critical listening areas", Audio Engineering Society preprint 4313 (1996)

Moulton et al., "The localization of phantom images in an omnidirectional stereophonic loudspeaker system", Audio Engineering Society preprint 2371 (1986)

Moulton, "The significance of early high-frequency reflections from loudspeakers in listening rooms", Audio Engineering Society preprint 4094 (1995)

Müller, "Zur Klangfärbung durch Kurzzeitreflexionen bei Rauschen, Sprache und Musik", 6. Internationaler Akustikkongress, Tokio, Japan, 21.-28. Aug. 1968, paper E-2-6

Muncey et al., "The acceptability of speech and music with a single artificial echo", Acustica 1953, vol. 3, S.169

Nakayama", "Preferred time delay of a single reflection for performers", Acustica 1984, vol. 54, S. 217

Naqvi et al., "The active listening room simulator: Part 1", Audio Engineering Society preprint 5385 (2001)

Naqvi et al., "The active listening room simulator: Part 2", Audio Engineering Society preprint 5425 (2001)

Naqvi et al., "The active listening room simulator: Part 3 – A subjective analysis", Audio Engineering Society preprint 5585 (2002)

Naqvi et al., "The active listening room- a novel approach to early reflection manipulation in critical listening rooms", J. of the Audio Engineering Society 2005, S.385

Nickson et al., "The acceptability of artificial echoes with reverberant speech and music", Acustica 1954, vol. 4, S.1515

Noxon, "Correlation detection of early reflections", Audio Engineering Society 11<sup>th</sup> International Conference 1992, S.332

Olive et al., "The detection of reflections in typical rooms", J. of the Audio Engineering Society 1989, S.539

Olive, "The preservation of timbre: Microphones, loudspeakers, sound sources and acoustical spaces", Audio Engineering Society 8<sup>th</sup> International Conference 1990, S.127

Olive et al., "Interaction between loudspeakers and room acoustics influences loudspeaker preferences in multichannel audio reproduction", Audio Engineering Society Preprint 7196 (2007)

Queen, "The Effect of Loudspeaker Radiation Patterns on Stereo Imaging and Clarity", J. of the Audio Engineering Society 1979, S.368

Ratliff, „Properties of hearing related to quadrophonic reproduction“, BBC RD 1974/38  
<http://downloads.bbc.co.uk/rd/pubs/reports/1974-38.pdf>

Reichardt et al., "Die Wahrnehmbarkeit der Veränderung von Schallfeldparametern bei der Darbietung von Musik, Acustica 1967, Vol. 18, S.274

Ringlstetter et al., „Untersuchungen zum Bündelungsmass von Lautsprechern“, Fortschritte der Akustik, DAGA '96, 22. Jahrestagung für Akustik (Deutsche Gesellschaft für Akustik), Bonn 1996

Von Ripka et al., "Die Beurteilung verschiedener stereofoner Wiedergabeeinrichtungen bezüglich der Abbildungsschärfe", Fortschritte der Akustik, DAGA '87, 13. Gemeinschaftstagung der Deutschen Arbeitsgemeinschaft für Akustik, Aachen 1987

Rodgers, "Pinna transformations and sound reproduction", J. of the Audio Engineering Society 1981, S.226

Rubak, "Coloration in room impulse response", Joint Balti-Nordic Acoustics Meeting 2004, 8.-10. Juni, Mariehamn, Åland, Finnland  
<http://www.acoustics.hut.fi/asf/bnam04/webprosari/papers/o23.pdf>

Rubak et al., "Coloration in natural and artificial room impulse responses", Audio Engineering Society 23<sup>rd</sup> Int. Conference, April 2003, paper no. 5

Rumsey, "Loudspeakers, reflections and rooms", J. of the Audio Engineering Society 2008, S.394

Salmi et al., "Listening room influence on loudspeaker sound quality and ways of minimizing it", Audio Engineering Society preprint 1871 (1982)

Salomons, "Coloration and binaural decoloration of sound due to reflections", Dissertation, TU Delft 1995  
[http://repository.tudelft.nl/assets/uuid:7f0331e3-bc1a-4d7f-8d2a-eb5d6cc04fbf/as\\_salomons\\_19951220.PDF](http://repository.tudelft.nl/assets/uuid:7f0331e3-bc1a-4d7f-8d2a-eb5d6cc04fbf/as_salomons_19951220.PDF)

Sato et al., „Subjective preference of cellists for the delay time of a single reflection in a performance”, J. of Sound and Vibration 2000, vol. 232, no.1, S.27

Schmidt et al., „Einfluss der Richtungs- und Zeitdiffusivität von Anfangsreflexionen auf den Raumeindruck“, Wissenschaftliche Zeitschrift der Universität Dresden 1973, vol. 22, no.2, S.313

Schroeder, „Binaural dissimilarity and optimum ceilings for concert halls: more lateral sound diffusion”, J. of the Acoustical Society of America 1979, vol.65, no.4, S.958

Schubert, „Untersuchungen über die Wahrnehmbarkeit von Einzelrückwürfen bei Musik“, Technische Mitteilungen RFZ 1966, vol. 10, no. 3, S.124

Seki et al., "Coloration perception depending on sound direction", IEEE Transactions on Speech and Audio Processing 2003, vol. 11, no. 6, S.817

Seraphim, "Über die Wahrnehmbarkeit mehrerer Rückwürfe von Sprachschall", Acustica 1961, vol. 11, S.80

Somerville et al., "Recent work on the effects of reflectors in concert halls and music studios", J. of Sound and Vibration 1866, Vol. 3, no.2, S.127

Spikofski et al., "Determining the psychoacoustic factors of loudspeaker reproduction in listening rooms", Audio Engineering Society preprint 3310 (1992)

Theiss et al., "Loudspeaker placement for optimized phantom source reproduction", Audio Engineering Society preprint 4246 (1996)

Theiss et al., "Localization experiments in three-dimensional sound reproduction", Audio Engineering Society preprint 4156 (1996)

Tohyama et al., „Interaural cross-correlation coefficients in stereo-reproduced sound

fields”, J. of the Acoustical Society of America 1989, vol. 85, no. 2, p.780 ; Cooper, “Notions of conventional stereo”, J. of the Acoustical Society of America 1989, vol.86, no.6, S.2452

Toole, “Loudspeakers and rooms for stereophonic sound reproduction”, Audio Engineering Society 8<sup>th</sup> International Conference 1990: The Sound of Audio

Toole, “Loudspeakers and rooms for sound reproduction – a scientific review”, J. of the Audio Engineering Society 2006, S.451  
<http://www.harman.com/EN-US/OurCompany/Technologyleadership/Documents/Scientific%20Publications/13686.pdf>

Voetman, “50 years of sound control room design”, Audio Engineering Society preprint 7140 (2007)

Völker, “Loudspeaker sound, its propagation and modification in the studio control room”, Audio Engineering Society preprint 1219 (1977)

Völker, “Listening conditions in an almost direct sound field”, Audio Engineering Society preprint 1314 (1978)

Völker, “Regieräume für Musikwiedergabe“, Rundfunktechnische Mitteilungen 1982, vol. 26, no. 3, S.112

Völker, “Acoustical design of control rooms for speech and music monitoring”, Audio Engineering Society preprint 2002 (1983)

Völker, “Proposal for a standard control room”, Audio Engineering Society preprint 2081 (1984)

Völker, “Control rooms for music monitoring”, J. of the Audio Engineering Society 1985, S.452

Völker, “The importance of early sound for recording and reproduction – is the quality of digital sound transmission sufficient?”, Audio Engineering Society preprint 4579 (1997)

Völker, “Frühe Schallanteile bei Aufnahme und Wiedergabe sowie raumakustische Konsequenzen für den Studiobau“

Völker, "Acoustics in control rooms – that recurring, burdensome subject"

Völker, "The V-criterion for good listening conditions in control rooms – on the importance of the first 15 ms", Proceedings of the Institute of Acoustics 1998, vol. 20, part 5, S.11

Völker, "Absorptions and reflections, useful and new tools in room acoustical design", Audio Engineering Society preprint 4982 (1999)

Völker, "Audio Engineering Society preprint 7140 (2007)

Völker, "Audio Engineering Society preprint 7140 (2007)

Völker, "Zur Bedeutung der ersten 15 ms bei der Beurteilung von Schallaufnahmen im Regieraum", Dissertation TU Berlin, 1996

Waagenaars, "Localization of sound in rooms with reflecting walls", Journal of the Audio Engineering Society 1990, S.99

Wagener, "Räumliche Verteilung der Hörrichtungen in synthetischen Schallfeldern", Acustica 1971, Vol. 25, No. 4 , S.203

Walker, "A new approach to the design of control room acoustics for stereophony", Audio Engineering Society preprint 3543 (1993)

Walker, "Early reflections in studio control rooms: the results from the first controlled image design installations", Audio Engineering Society preprint 3853 (1994)

Walker, "High frequency room responses: Acoustic design and the control of stereophonic image quality", BBC RD 1994/11

<http://downloads.bbc.co.uk/rd/pubs/reports/1994-11.pdf>

Walker, "CONTROLLED IMAGE DESIGN: The measurement of Time-Frequency responses", BBC RD 1995/3

<http://downloads.bbc.co.uk/rd/pubs/reports/1995-03.pdf>

Walker, "Controlled Image Design: The management of stereophonic image quality", BBC RD 1995/4

<http://downloads.bbc.co.uk/rd/pubs/reports/1995-04.pdf>

Walker, "Controlled Image Designs: Results from the first installations", BBC RD 1995/5

<http://downloads.bbc.co.uk/rd/pubs/reports/1995-05.pdf>

Walker, "A controlled-reflection listening room for multichannel sound", Audio Engineering Society preprint 4654 (1998)

Watkins, "The influence of early reflections on the identification and lateralization of vowels", J. of the Acoustical Society of America 1999, vol. 106, no. 5, S.2933

Welti, "The Importance of Reflections in a Binaural Room Impulse Response", Audio Engineering Society preprint 5839 (2003)

Wrightson et al., "Influence of rear-wall reflection patterns in LEDE-type recording studio control rooms", Journal of the Audio Engineering Society 1986, S.796

Yamada et al., "A simple method to detect audible echoes in room acoustical design", Applied Acoustics 2006, vol. 67, S.835

Yanagawa et al., "Sound image broadening by a single reflection considering temporal change of interaural cross-correlation", Acustica 2001, Vol.87, S.247

Zurek, "Measurements of binaural echo suppression", J. of the Acoustical Society of America 1979, vol. 66, no. 5, S.1750

Zyun, "Problems of sound reflections in rooms", Applied Acoustics 1975, vol. 8., S.157

## Allgemeines (Stereophonie, Lautsprecher)

Aarts, "Phantom sources applied to stereo-base widening", J.of the Audio Engineering Society 2000, S.181

Allen et al., "Image method for efficiently simulating small-room acoustics", J. of the Acoustical Society of America 1979, vol. 66, no. 4, S.943

Aoki et al., "Stereo Reproduction with Good Localization over a Wide Listening Area", J. of the Audio Engineering Society 1990, S.433

Augspurger, "Loudspeakers in control rooms and living rooms", Audio Engineering Society 8<sup>th</sup> International Conference 1990: The Sound of Audio

Azima et al., "Boundary interaction of diffuse field distributed-mode radiators", Audio Engineering Society preprint 4635 (1997)

Azima et al., "Diffuse-field distributed-mode radiators and their associated early reflections", Audio Engineering Society preprint 4759 (1998)

Backman, "Computation of diffraction for loudspeaker enclosures", J. of the Audio Engineering Society 1989, S.353

Bai et al., "Comprehensive analysis of loudspeaker span effects on crosstalk cancellation in spatial sound reproduction", Audio Engineering Society preprint 6701 (2006)

Bareham, "Measurement of spatial characteristics of sound reproduced in listening spaces", Audio Engineering Society preprint 4381 (1996)

Barbour, "Elevation perception: phantom images in the vertical hemi-sphere", 24th International Conference 2003: Multichannel Audio, The New Reality

Baskind et al., "Sound power radiated by sources in diffuse field", Audio Engineering Society preprint 5146 (2000)

Bastyr et al., "On the acoustic radiation from a loudspeaker's cabinet", J. of the Audio Engineering Society 2003, S.234

Behler et al., „Untersuchung der Gehäuseschwingung bei Tieftonlautsprechern“, Fortschritte der Akustik, DAGA '05, 31. Jahrestagung für Akustik (Deutsche Gesellschaft für Akustik), München 2005

Behrens et al., „Untersuchungen zur Summenlokalisierung in der Medianebene“, Fortschritte der Akustik, DAGA '94, (Deutsche Gesellschaft für Akustik), S.1157

Benjamin, "An experimental verification of localisation in 2-channel stereo", Audio Engineering Society preprint 6968 (2006)

Benjamin et al., "The effect of head diffraction on stereo localization in the mid-frequency range", Audio Engineering Society preprint 7018 (2007)

Bews, "Application of the geometric theory of diffraction to diffraction at the edges of loudspeaker baffles", J. of the Audio Engineering Society 1986, S.771

Bhatt, "Effect of an Absorbing Wall on the Decay of Normal Frequencies", J. of the Acoustical Society of America 1939, vol. 11, S.67

Bloom, "Creating source elevation illusions by spectral manipulation", J. of the Audio Engineering Society 1977, S.560

Bock et al., "The Effects of Interaural Crosstalk on Stereo Reproduction and Minimizing Interaural Crosstalk in Nearfield Monitoring by the Use of a Physical Barrier: Part 1", Audio Engineering Society Preprint 2420-A (1986)

Bock et al., "The Effects of Interaural Crosstalk on Stereo Reproduction and Minimizing Interaural Crosstalk in Nearfield Monitoring by the Use of a Physical Barrier: Part 2", Audio Engineering Society Preprint 2420-B (1986)

Bücklein, "Hörbarkeit von Unregelmässigkeiten in Frequenzgängen bei akustischer Übertragung", Frequenz 1962, Bd. 16, No. 3, S.103

Cabrera et al., "Vertical Localization and Image Size Effects in Loudspeaker Reproduction", 24th International Conference 2002: Multichannel Audio: The New Reality

Chesnokov et al., "Acoustic characteristics of timber-framed listening rooms", Audio Engineering Society preprint 4630 (1997)

Choisel et al., "Audibility of phase response differences in a stereo playback system. Part 2: Narrow-band stimuli in headphones and loudspeakers", Audio Engineering Society Preprint 7559 (2008)

Clark, "Measuring audible effects of time delays in listening rooms", Audio Engineering Society preprint 2012 (1983)

Clark, "Listening tests for the effect of speaker directivity and positioning on auditory scene perception", Audio Engineering Society preprint 8307 (2010)

Cooper et al., "On acoustical specification of natural stereo image", Audio Engineering Society preprint 1616 (1980)

Damaske et al., "Interaurale Kreuzkorrelation für mehrkanalige Lautsprecherwiedergabe", Acustica 1972, vol. 27, S.232

Damaske, "Subjektive Untersuchung von Schallfeldern", Acustica 1967/68, vol. 19, S.190

Damaske, "Richtungsabhängigkeit von Spektrum und Korrelationsfunktionen der an den Ohren empfangenen Signale", Acustica 1969/70, vol. 22, no. 4, S.191

Damaske, "Head-related 2-channel stereophony with loudspeaker reproduction", J. of the Acoustical Society of America 1970, vol. 50, no. 4, pt.2, S.1109

Damaske et al., "Zur richtungsgetreuen stereophonon Zweikanalübertragung", Acustica 1971, vol.24, S.222

Daniel, "Nearfield monitors – some things they are and some things they are not", Audio Engineering Society preprint 3770 (1993)

D'Antonio et al., "Optimizing Home Listening Rooms, Part 1", Audio Engineering Society preprint 2735 (1988)

D'Antonio et al., "Sound intensity and interaural cross-correlation measurements using time delay spectrometry", J. of the Audio Engineering Society 1989, S.659

D'Antonio et al., "Diffusor applications in rooms", Applied Acoustics, vol. 60, p.113 (2000)

Darlington et al., „Time/frequency response of a room with active acoustic absorption”, Audio Engineering Society preprint 4192 (1996)

Doeven et al., "Equalization of loudspeaker low frequency response in a room", Audio Engineering Society Preprint 3821 (1994)

Dutton, "The assessment of two-channel stereophonic reproduction performance in studio monitor rooms, living rooms and small theatres", J. of the Audio Engineering Society 1962, S.98

Evans et al., "Effects of loudspeaker directivity on perceived sound quality – a review of existing studies", Audio Engineering Society preprint 7745 (2009)

Fazenda et al., "The time domain performance of standard listening rooms: An assessment of current rooms and recommendations for achieving improved compatibility", Proceedings of the Institute of Acoustics 2005, vol.25, no.5, S.1

Feredikis et al., "The beneficial coupling of cardioid low frequency sources to the acoustic of small rooms", Audio Engineering Society preprint 6110 (2004)

Ferguson et al., "Vertical localisation of sound from multiway loudspeakers", J. of the Audio Engineering Society 2005, S.163

Fielder, "An experimental verification of localization in two-channel stereo", Audio Engineering Society preprint 6968 (2006)

Flanagan et al., "Discrimination of group delay in clicklike signals presented via headphones and loudspeakers", J. of the Audio Engineering Society 2005, S.593

Fürjes et al., "Validation of geometrical room acoustics algorithms by comparing predicted and measured room responses", 23rd International Conference on Noise and Vibration Engineering, ISMA; Leuven, Belgien, 16.-18. Sept. 1998

Fürjes et al., "Evaluation and design of small rooms", J. of Building Acoustics 2000, vol. 7, no. 4, S.277

Furlong et al., "Loudspeakers, listening rooms, and effective synthetic auralization",

Audio Engineering Society preprint 3445 (1992)

Gaal, "Calculation of the stereophonic localisation area", Audio Engineering Society preprint B-4 (1976)

Gardner, "Image fusion, broadening, and displacement in sound location", J. of the Acoustical Society of America 1969, vol. 46, no.2, pt.2, S.339

Gerzon, "Signal processing for simulating realistic stereo images", Audio Engineering Society preprint 3423 (1992)

Goossens, "Wahrnehmbarkeit von Phasenverzerrungen", Fortschritte der Akustik, DAGA '97, 23. Jahrestagung für Akustik (Deutsche Gesellschaft für Akustik), Kiel 1997, S. 359

Greenfield et al., "The audibility of loudspeaker phase distortion", Audio Engineering Society preprint 2927 (1990)

Griesinger, "Spaciousness and localisation in listening rooms and their effects on the recording technique", J. of the Audio Engineering Society 1986, S.255

Griesinger, "Theory and design of a digital audio signal processor for home use", J. of the Audio Engineering Society 1989, S.40

Griesinger, "Spatial impression and envelopment in small rooms", Audio Engineering Society preprint 4638 (1997)

Griesinger, "Speaker placement, externalization and envelopment in home listening rooms", Audio Engineering Society preprint 4860 (1998)

Griesinger, "General overview of spatial impression, envelopment, localization, and externalization", Audio Engineering Society 15th International Conference 1998: Audio, Acoustics & Small Spaces, paper 15-013

Hansen et al., "Making recordings for simulation tests in the Archimedes project", J. of the Audio Engineering Society 1991, S.768

Harris et al., "Stereophonic localization in the presence of boundary reflections, comparing specular and diffuse acoustic radiators", Audio Engineering Society preprint 4684 (1998)

Harris et al., "Stereophonic localization in rooms, comparing conventional and distributed-mode loudspeakers", Audio Engineering Society preprint 4794 (1998)

Holland et al., "Loudspeakers, mutual coupling and phantom images in rooms", Audio Engineering Society preprint 4581 (1997)

Holland et al., "Steady state and transient loudspeaker frequency responses", Proceedings of the Institute of Acoustics 2003, vol.25, no.8

Holland et al., "Modulation depth as a measure of loudspeaker low-frequency performance", Proceedings of the Institute of Acoustics 2004, vol.26, no.8, S.107

Holland et al., "Excess phase effects and modulation transfer function degradation in relation to loudspeakers and rooms intended for the quality control of music", Proceedings of the Institute of Acoustics 2005, vol.27, no.8

Hunt et al., "Analysis of Sound Decay in Rectangular Rooms", J. of the Acoustical Society of America 1939, vol. 11, S.80

Iverson, "The theory of loudspeaker cabinet resonances", J. of the Audio Engineering Society 1973, S.177

Kates, "Loudspeaker cabinet reflection effects", J. of the Audio Engineering Society 1979, S.338

Kates, "Optimum loudspeaker directional patterns", J. of the Audio Engineering Society 1980, S.787

Kates, "Dipole loudspeaker response in listening rooms", J. of the Audio Engineering Society 2002, S.363

Keibs, "Die Schallfeldverhältnisse in Aufnahmeräumen und ihre Abbildung im Wiedergaberaum mit Hilfe der Zwei-Kanaltechnik", Nachrichtentechnik 1966, vol. 16, no.1, S.3

Krauth et al., "Modelluntersuchungen an Flatterechos", Frequenz 1964, Bd. 18, Nr. 8, S. 247

Kuhl, "Untersuchungen zur Pseudostereophonie und Stereophonie mit Kugellautsprechern und "Raumklang"-Geräten", Acustica 1956, vol.6, S.474

Kuhl, „Über eine Lautsprecheranordnung zur Wiedergabe stereophoner Schallaufnahmen“, Rundfunktechnische Mitteilungen 1959, vol. 3, no. 4, S.170

Kuhl, "Unterschiedliche Bedingungen beim Hören in einem Raum und bei elektroakustischen Übertragungen" Rundfunktechnische Mitteilungen 1969, vol. 13, no. 5, S.205

Kuhl, „Hörereignisort und Wahrnehmungsschwellen verzögerten Schalls bei einkanaliger Übertragung und zweiohrigem Hören“, Acustica 1983, vol.54, S.97

Kunchur, "Audibility of temporal smearing and time misalignment of acoustic signals",

Technical Acoustics 2007, 17  
<http://www.physics.sc.edu/kunchur/align.pdf>

Kurozumi et al., „The relationship between the cross-correlation coefficient of two-channel acoustic signals and sound image quality”, J. of the Acoustical Society of America 1983, vol. 74, no. 6, S.1726

Krauss, „On the audibility of group delay distortion at low frequencies“, Audio Engineering Preprint 2894 (1990)

Krump, „Zur Wahrnehmbarkeit von schmalbandigen Frequenzgangvariationen bei Lautsprechern“, Fortschritte der Akustik, DAGA '2000, 26. Jahrestagung für Akustik (Deutsche Gesellschaft für Akustik), Oldenburg 2000

Lavandier et al., “The restitution of timbre by loudspeakers in a listening room: perceptual and physical measurements”, Audio Engineering Society preprint 6240 (2004)

Lavandier et al., “The influence of stereophony on the restitution of timbre by loudspeakers”, Audio Engineering Society preprint 6619 (2005)

Lavandier et al., “Comparative measurements of loudspeakers in a listening room”, J. of the Acoustical Society of America 2008, vol. 123, no.1, S.77

Leakey, “Some measurements on the effects of interchannel intensity and time differences in two channel sound systems”, J. of the Acoustical Society of America 1959, vol. 31, no. 7, S.977

Lee et al., “Elicitation and grading of subjective attributes of 2-channel phantom images”, Audio Engineering Society preprint 6142 (2004)

Lee et al., “Auditory perception of nonlinear distortion”, Audio Engineering Society preprint 5891 (2003)

Lee et al., “Audibility of nonlinear distortion with variations in sound pressure level and group delay”, Audio Engineering Society preprint 6888 (2006)

Linkwitz, “Which loudspeaker parameters are important to create the illusion of a live performance in the living room”, Audio Engineering Society preprint 5637 (2002)

Linkwitz, “The challenge to find the optimum radiation pattern and placement of stereo loudspeakers in a room for the creation of phantom sources and simultaneous masking of real sources”, Audio Engineering Society preprint 7959 (2009)

Linkwitz et al., “Recording and reproduction over two loudspeakers as heard live Part 1: Hearing, loudspeakers and rooms”, Audio Engineering Society preprint 7670 (2009)

Lipshitz, "An investigation of sound radiation by loudspeaker cabinets", Audio Engineering Society preprint 3074 (1991)

Lorho, "The effect of speaker frequency bandwidth limitation and stereo base width on perceived quality", Audio Engineering Society preprint 6817 (2006)

Maa, "The flutter echoes", J. of Acoustical Society of America 1941, vol. 13, S.170

Makita, "On the directional localisation of sound in the stereophonic sound field", E.B.U. review, Part A (Technical), 1962, No.73, Juni, S.102

Matsudaira et al., "Phase difference and sound image localisation", J. of the Audio Engineering Society 1973, S.792

Merimaa, "Analysis, synthesis and perception of spatial sound – binaural localization modelling and multichannel loudspeaker reproduction", Dissertation Helsinki University of Technology, 2006

<http://lib.tkk.fi/Diss/2006/isbn9512282917/isbn9512282917.pdf>

Møller, "Relevant Hi-fi tests at home (Hifi tests with 1/3 octave pink weighted random noise)", Audio Engineering Society preprint A-5 (1974)

Moir, „Interactions of loudspeakers and rooms“, Wireless World 1977, Juni, S.65

Moulton et al., "The localization of phantom sources in an omnidirectional stereophonic loudspeaker system", Audio Engineering Society preprint (1986)

Neher et al., "Training of listeners for the evaluation of spatial sound reproduction", Audio Engineering Society preprint 5584 (2002)

Newell, "The Yamaha NS10M – 20 years a reference monitor: Why?", Proceedings of the Institute of Acoustics 2001, vol. 23, pt.8, S.29

Nilsson, "Decay processes in rooms with non-diffuse sound fields. Part 1: Ceiling treatment with absorbing material", J. of Building Acoustics 2004, vol. 11, no. 1, S.39

Okumura et al., "Distance perception of phantom sound images presented by multiple loudspeakers placed at different distance in front of listener", Audio Engineering Society preprint 6891 (2006)

Olive et al., "The effects of loudspeaker placement on listener preference ratings", J. of the Audio Engineering Society 1994, S.651

Olive et al., "The Variability of Loudspeaker Sound Quality Among Four Domestic-Sized Rooms, Audio Engineering Society preprint 4092 (1995)

Olive, Interaction between Loudspeakers and Room Acoustics Influences Loudspeaker Preferences in Multichannel Audio Reproduction”, Audio Engineering Society preprint 7196 (2007)

Olive, “Listener loudspeaker preference ratings obtained in situ match those obtained via a binaural room scanning measurement and playback system”, Audio Engineering Society preprint 7034 (2007)

Olson, „Gradient loudspeakers“, J. of the Audio Engineering Society 1973, S.86

Ortmeyer, “Schallfelduntersuchungen bei Zweikanalstereofonie”, Hochfrequenztechnik und Elektroakustik, vol. 5, no. 4, S.137

Ortmeyer, „Über die Lokalisierung von Schallquellen bei der Zweikanalstereofonie”, Hochfrequenztechnik und Elektroakustik 1966, vol. 75, no.3, S.77

Park et al., “Evaluation of Stereophonic Images with Listening Tests and Model Simulations”, Audio Engineering Society preprint 7463 (2008)

Parodi et al., “A subjective evaluation of the minimum audible channel separation in binaural reproduction systems through loudspeakers”, Audio Engineering Society preprint 8104 (2010)

Polack et al., “Semiclassical approximation of loudspeaker positioning in room”, 23rd International Conference 2003: Signal Processing in Audio Recording and Reproduction

Platte, “Ein Beitrag zum Verständnis der Summenlokalisierung”, Fortschritte der Akustik, DAGA ’80, 7. Jahrestagung für Akustik (Deutsche Gesellschaft für Akustik), München 1980, S.1

Prokofieva, “Relation between correlation characteristics of sound field and width of listening location”, Audio Engineering Society preprint 7089 (2007)

Rasmussen et al., “On loudspeaker cabinet diffraction”, J. of the Audio Engineering Society 1994, S.147

Ratliff, “Properties of hearing related to quadraphonic reproduction”, BBC RD 1974/38  
<http://downloads.bbc.co.uk/rd/pubs/reports/1974-38.pdf>

Reed et al., “An investigation on early reflection’s effect on front-back localization in spatial audio”, Audio Engineering Society preprint 7884 (2009)

Rimell, “Reduction of loudspeaker polar response aberrations through the application of psychoacoustic error concealment”, IEE proceedings – Vis. Image Signal Processing, vol. 145, no. 1, Febr. 1998, S.11

Von Ripka et al., "Die Beurteilung verschiedener stereofoner Wiedergabeeinrichtungen bezüglich der Abbildungsschärfe", Fortschritte der Akustik, DAGA '87, 13.  
Gemeinschaftstagung der Deutschen Arbeitsgemeinschaft für Akustik, Aachen 1987

Rodenas et al., "Sweet spot widening for stereophonic sound reproduction", IEEE Workshop on Applications of Signal Processing to Audio and Acoustics, New Paltz, New York, 21.-24. Okt. 2001

Rodenas et al., "Derivation of an optimal directivity pattern for sweet spot widening in stereo sound reproduction", J. of the Acoustical Society of America 2003, vol.113, no. 1, S.267

Rodgers, "Pinna transformations and sound reproduction", J. of the Audio Engineering Society 1981, S.226

Rychtarikova et al., "Binaural sound source localisation in real and virtual rooms", J. of the Audio Engineering Society 2009, S. 205

Sandel et al., "Localisation of sound from single and paired sources", J. of the Acoustical Society of America 1955, vol. 27, no.5, S.842

Scherer, "Zur Korrelation zw. subjektiver Beurteilung von Lautsprechern und ihrer linearen Verzerrungen bei periodischen Signalen", Fortschritte der Akustik, DAGA '88, (Deutsche Gesellschaft für Akustik), S. 609

Schmid et al., „Psychoakustische Experimente mit einem elektroakustischen Wiedergabesystem mit variierbarer Sprungantwort“, Fortschritte der Akustik, DAGA '95, 21. Jahrestagung für Akustik (Deutsche Gesellschaft für Akustik), Saarbrücken 1995

Seraphim, "Raumakustische Nachbildungen mit elektroakustischen Hilfsmitteln", Acustica 1963, vol. 13, S.75

Shen et al., "Optimisation of the locations of the loudspeaker and absorption material in a small room", Applied Acoustics 2004, vol. 65, S.791

Shirley et al., "The effect of stereo crosstalk on intelligibility: comparison of a phantom stereo image and a central loudspeaker source", J. of the Audio Engineering Society 2007, S.852

Shorter et al., "Stereophony: the effect of differences between the amplitude / frequency characteristics of left and right channels", BBC RD 1964/67  
<http://downloads.bbc.co.uk/rd/pubs/reports/1964-67.pdf>

Shorter, "The influence of loudspeaker directivity and orientation on the effective audience area in 2-channel stereophonic reproduction", BBC RD 1963/1

<http://downloads.bbc.co.uk/rd/pubs/reports/1963-01.pdf>

Spikofski et al., "Determining the psychoacoustic factors of loudspeaker reproduction in listening rooms", Audio Engineering Society preprint 3310 (1992)

Spikofski, "Zur Bewertung von Schallfeld-Parameter-Unterschieden in Studio-Abhörsituationen", Rundfunktechnische Mitteilungen 2000, vol. 44, no. 1, S.1

Staffeldt, "Differences in the perceived quality of loudspeaker sound reproduction caused by loudspeaker-room-listener interactions", Audio Engineering Society preprint 3046 (1991)

Staffeldt et al., "The subjectively-perceived frequency response in small and medium-sized rooms", Society of Motion Pictures and Television Engineers Journal 1982, vol.91, no. 7, S.638

Tappan, "Loudspeaker enclosure walls", J. of the Audio Engineering Society 1962, S.224

Taylor, "The maximum permissible interchannel crosstalk for imperceptible restriction of stereophonic stage width", BBC RD 1979/7

<http://downloads.bbc.co.uk/rd/pubs/reports/1979-07.pdf>

Theile, "Zur Kompabilität von Kunstkopfsignalen mit Intensitätsstereophonien Signalen bei Lautsprecherwiedergabe: Die Richtungsabbildung", Rundfunktechnische Mitteilungen 1981, vol. 25, no.2, S.67

Theile, "Zur Kompabilität von Kunstkopfsignalen mit Intensitätsstereophonien Signalen bei Lautsprecherwiedergabe: Die Klangfarbe", Rundfunktechnische Mitteilungen 1981, vol. 25, no. 4, S.146

Theile, "Zur Theorie der optimalen Wiedergabe von stereophonien Signalen über Lautsprecher und Kopfhörer", Rundfunktechnische Mitteilungen 1981, vol. 25, no. 4, S.155

Theile, "Über die Lokalisation im überlagerten Schallfeld", Dissertation TU Berlin 1983

Theile et al., „Localization of lateral phantom sources“, J. of the Audio Engineering Society 1977, S.196

Theile, "On the naturalness of two-channel stereo sound", J. of the Audio Engineering Society 1991, S.761

Theiss et al., "Localization experiments in three-dimensional sound reproduction", Audio Engineering Society preprint 4156 (1996)

Thomanek, "Wechselwirkungen zw. Lautsprechern und Wohnräumen", radio fernsehen

elektronik 1991, vol. 40, no. 1, S. 17

Tohyama et al., „Interaural cross-correlation coefficients in stereo-reproduced sound fields”, J. of the Acoustical Society of America 1989, vol. 85, no. 2, S.780 ; Cooper, “Notions of conventional stereo”, J. of the Acoustical Society of America 1989, vol.86, no.6, S.2452

Toole, “Loudspeakers and rooms for stereophonic sound reproduction”, Audio Engineering Society 8<sup>th</sup> International Conference 1990: The Sound of Audio

Toole, “The acoustics and psychoacoustics of loudspeakers and rooms – the stereo past and the multichannel future”, Audio Engineering Society preprint 5201 (2000)

Toole, "The audio industry: The state of our science and art ", Canadian Acoustics 2002, vol. 30, no. 3 , S.18

Vickers, „Fixing the phantom center: diffusing acoustical crosstalk“, Audio Engineering Society preprint 7916 (2009)

Ward et al., “The effect of rooms on multiple loudspeaker loading”, Audio Engineering Society preprint 4413 (1997)

Weisser et al., “Evaluation of sound quality, boominess and boxiness in small rooms”, J. of the Audio Engineering Society 2006, S.495

Wendt, “Das Richtungshören bei Zweikanal-Stereophonie”, Rundfunktechnische Mitteilungen 1964, vol. 8, no.3, S.171

Wollherr et al., „Horizontal/Vertikal differenziertes Bündelungsmass elektroakustischer Wandler“, Fortschritte der Akustik, DAGA '97, 23. Jahrestagung für Akustik (Deutsche Gesellschaft für Akustik), Kiel 1997

Wöhr et al., “Room-related balance technique”, Audio Engineering Society preprint 2886 (1990)

Zarouchas et al., “Perceptual distortion maps for room reverberation”, Audio Engineering Society Preprint 7093 (2007)