

Publications

Peer Reviewed Journal Papers

Ziemer, Tim & Plath, Niko, “Microphone and Loudspeaker Array Signal Processing Steps towards a ‘Radiation Keyboard’ for Authentic Samplers”, in: *Applied Sciences* 10(7), paper number: 2333, 18 pages, <http://doi.org/10.3390/app10072333>, 2020.

Vajsbaher, Tina, Ziemer, Tim & Schultheis, Holger, “A multi-modal approach to cognitive training and assistance in minimally invasive surgery”, *Cognitive Systems Research* 64, pp. 57–72, <https://doi.org/10.1016/j.cogsys.2020.07.005>, 2020. ([Free View](#))

Ziemer, Tim, Nuchprayoon, Nuttawut & Schultheis, Holger, “Psychoacoustic Sonification as User Interface for Human-Machine Interaction” accepted by: *International Journal of Informatics Society* 12(1), <http://doi.org/10.13140/RG.2.2.14342.11848>, 2020 (preprint).

Ziemer, Tim & Schultheis, Holger, “Psychoacoustic Auditory Display for Navigation. An Auditory Assistance System for Spatial Orientation Tasks”, in: *Journal on Multi-Modal User Interfaces* 13(3), pp. 205–218, <http://doi.org/10.1007/s12193-018-0282-2>, 2019. ([Free view](#))

Ziemer, Tim, Schultheis, Holger, Black, David & Kikinis, Ron, “Psychoacoustical Interactive Sonification for Short-Range Navigation”, in: *Acta Acustica United With Acustica* 104(6), pp. 1075—1093, <http://doi.org/10.3813/AAA.919273>, 2018.

Ziemer, Tim & Bader, Rolf, “Psychoacoustic Sound Field Synthesis for Musical Instrument Radiation Characteristics”, in: *Journal of the Audio Engineering Society* 65(6), pp. 482—496, <http://doi.org/10.17743/jaes.2017.0014>, 2017.

Books and Book Chapters

Ziemer, Tim: *Psychoacoustic Music Sound Field Synthesis. Creating Spaciousness for Composition, Performance, Acoustics, and Perception*, Current Research in Systematic Musicology, vol. 7., <http://doi.org/10.1007/978-3-030-23033-3>, Cham: Springer 2020.

Ziemer, Tim, “Wave Field Synthesis”, in: Rolf Bader (Ed.): *Springer Handbook of Systematic Musicology*, Springer Handbooks, http://doi.org/10.1007/978-3-662-55004-5_18, Berlin, Heidelberg: Springer 2018, pp. 329—347.

Ziemer, Tim, “Source Width in Music Production. Methods in Stereo, Ambisonics, and Wave Field Synthesis”. Albrecht Schneider (Ed.): *Studies in Musical Acoustics and Psychoacoustics*, Current Research in Systematic Musicology, http://doi.org/10.1007/978-3-319-47292-8_10, Cham: Springer 2017, pp. 299—340.

Ziemer, Tim, “Psychoacoustic Effects in Wave Field Synthesis Applications”, in: Albrecht Schneider & Arne von Ruschkowski (Eds.): *Systematic Musicology: Empirical and Theoretical Studies*, Hamburger Jahrbuch für Musikwissenschaft, <http://doi.org/10.3726/978-3-653-01290-3>, Frankfurt am Main: Peter Lang 2012, pp. 153—162.

Peer Reviewed Conference Proceedings Papers

Ziemer, Tim, Höring, Thomas, Meirose, Lukas & Schultheis, Holger, “Monophonic Sonification for Spatial Navigation”, *International Workshop on Informatics (IWIN)* 2019, <http://www.infoc.org/conference/iwin2019/download/IWIN2019-Proceedings.pdf#page=95>, Hamburg, Sep 2019. [[Keynote Talk](#)]

Ismailogullari, Abdullah & Ziemer, Tim, “Soundscape Clock: Soundscape Compositions That Display the Time of the Day”, in: *25th International Conference on Auditory Display (ICAD2019)*, <http://doi.org/10.21785/icad2019.034>, Newcastle, Jun 2019.

Schwarz, Sebastian & Ziemer, Tim, “A Psychoacoustic Sound Design for Pulse Oximetry”, in: *25th International Conference on Auditory Display (ICAD2019)*, <http://doi.org/10.21785/icad2019.024>, Newcastle, Jun 2019.

Ziemer, Tim & Schultheis, Holger, “Psychoacoustical Signal Processing for Three-Dimensional Sonification”, in: *25th International Conference on Auditory Display (ICAD2019)*, <http://doi.org/10.21785/icad2019.018>, Newcastle, Jun 2019.

Stirnat, Claudia & Ziemer, Tim, “Spaciousness in Music: The Tonmeister's Intention and the Listener's Perception”, in: Philipp Kessling and Thomas Görne (Eds.): *KLK 2017. klingt gut! 2017 – International Symposium on Sound, vol 1*, <https://doi.org/10.29007/nv93>, 2019, pp. 42–51.

Ziemer, Tim & Schultheis, Holger, “A Psychoacoustic Auditory Display for Navigation”, in: *24th International Conference on Auditory Display (ICAD2018)*, <http://doi.org/10.21785/icad2018.007>, Houghton (MI): Jun 2018, pp. 136—144.

Ziemer, Tim, Yu, Yi & Tang, Suhua, “Using Psychoacoustic Models for Sound Analysis in Music”, in: *Proceedings of the 8th Annual Meeting of the Forum on Information Retrieval Evaluation (FIRE)*, <http://doi.org/10.1145/3015157.3015158>, Kolkata: Dec 2016, pp. 1-7.

Ziemer, Tim & Bader, Rolf, “Implementing the Radiation Characteristics of Musical Instruments in a Psychoacoustic Sound Field Synthesis System”, in: *139th International Audio Engineering Society (AES) Convention*, <http://www.aes.org/e-lib/browse.cfm?elib=18022>, New York (NY): Oct 2015.

Ziemer, Tim, “Spatial Sound Impression and Precise Localization by Psychoacoustic Sound Field Synthesis”, in: Robert Mores (Ed.): *Musikalische Akustik zwischen Empirie und Theorie. Tagungsband zum Seminar des Fachausschusses Musikalische Akustik (FAMA) der Deutschen Gesellschaft für Akustik (DEGA)*, <https://doi.org/10.25366/2020.07>, Hamburg: Oct 2015, p. 17—22.

Ziemer, Tim, “Localizing Swimming Objects in Noisy Environments by Applying Nearfield Acoustic Holography and Minimum Energy Method”, in: *ASME 34th International Conference on Ocean, Offshore and Arctic Engineering (OMAE2015)*, <http://doi.org/10.1115/OMAE2015-41733>, St. John's: Jun 2015, Paper-Number: OMAE2015-41733.

Ziemer, Tim, “Sound Radiation Characteristics of a Shakuhachi with different Playing Techniques”, in: *Proceedings of the International Symposium on Musical Acoustics (ISMA)*, <http://www.conforg.fr/isma2014/cdrom/data/articles/000121.pdf>, Le Mans: Jul 2014, pp. 549—555.

Ziemer, Tim, “Towards a Lateral Line Sensor to Supplement Active Sonar in Shallow Water”. *ASME 33th International Conference on Ocean, Offshore and Arctic Engineering (OMAE2014)*, <http://doi.org/10.1115/OMAE2014-23624>, San Francisco (CA): 2014: Paper-Number: V007T05A011.

Ziemer, Tim, “A psychoacoustic Approach to Wave Field Synthesis”, in: *Audio Engineering Society (AES) Conference: 42nd International Conference: Semantic Audio*, <http://www.aes.org/e-lib/browse.cfm?elib=15942>, Ilmenau: Jul 2011, Paper-Number: P2-1.

Ziemer, Tim, “Wave Field Synthesis by an Octupole Speaker System”, in: *Proceedings of the Second International Conference of Students of Systematic Musicology (SysMus09)*, http://www.ipem.ugent.be/sysmus09/files/Sysmus09_webproceedings.pdf#page=90, Ghent: 2009, pp. 89—93.

Theses

Ziemer, Tim, *Implementation of the radiation characteristics of musical instruments in wave field synthesis applications*, Doctoral Thesis, <http://ediss.sub.uni-hamburg.de/volltexte/2016/7939/>, Hamburg: University of Hamburg 2015.

Ziemer, Tim: *Psychoacoustic Wave Field Synthesis of Musical Sounds: Theory and Application*. Magister's Thesis, Hamburg: University of Hamburg, 2011.

Editor Reviewed Conference Proceedings Papers

Ziemer, Tim & Schultheis, Holger, "Perceptual Auditory Display for Two-Dimensional Short-Range Navigation", in: *Fortschritte der Akustik – DAGA 2018*, <https://www.dega-akustik.de/publikationen/online-proceedings/>, Munich 2018, pp. 1094—1096.

Ziemer, Tim, Black, David & Schultheis, Holger, "Psychoacoustic Sonification Design for Navigation in Surgical Interventions", in: *Proceedings of Meetings on Acoustics (POMA)* 30(1), <http://doi.org/10.1121/2.0000557>, 2017, Paper-Number: 050005.

Böhlke, Leonie & Ziemer, Tim, "Perceptual Evaluation of Violin Radiation Characteristics in a wave field synthesis system", in: *Proceedings of Meetings on Acoustics (POMA)* 30(1), <http://doi.org/10.1121/2.0000524>, 2017, Paper-Number: 035001.

Ziemer, Tim, "Perceptual sound field synthesis concept for music presentation" *Proceedings of Meetings on Acoustics (POMA)* 30(1), <http://doi.org/10.1121/2.0000661>, 2017: Paper-Number: 015016.

Ziemer, Tim & Bader, Rolf, "Complex point source model to calculate the sound field radiated from musical instruments", in: *Proceedings of Meetings on Acoustics (POMA)* 25(1), <https://doi.org/10.1121/2.0000122>, 2015, Paper-Number: 035001.

Extended Abstracts and Precs

Schultheis, Holger, Ziemer, Tim & Vajsbaheer, Tina, "Cognitive Surgical Assistance in Minimally-Invasive Interventions", 8. *Interdisziplinären Workshops zu Kognitiven Systemen*, https://www.researchgate.net/publication/332901260_Cognitive_Surgical_Assistance_in_Minimally-Invasive_Interventions, Duisburg: Mar 2019.

Ziemer, Tim & Black, David, "Psychoacoustically motivated sonification for surgeons", in: *International Journal of Computer Assisted Radiology and Surgery (JCARS)* 12(Suppl 1:1), <http://doi.org/10.1007/s11548-017-1588-3>, 2017, pp. 265—266.

Ziemer, Tim, "Two-dimensional psychoacoustic sonification", in: Franziska Olbertz (Ed.): 33. *Jahrestagung der deutschen Gesellschaft für Musikpsychologie (DGM)*, https://www.researchgate.net/publication/319778727_Two-dimensional_psychoacoustic_sonification, Hamburg: Sep 2017, pp. 60—61.

Ziemer, Tim, Black, David & Schultheis, Holger, "A Psychoacoustic Review of Auditory Displays in the OR". 16. *Jahrestagung der Deutschen Gesellschaft für Computer- und Roboterassistierte Chirurgie e.V. (CURAC)*, https://www.researchgate.net/publication/320958966_A_Psychoacoustic_Review_of_Auditory_Displays_in_the_OR_Precis, Hannover: Oct 2017.

Ziemer, Tim, "Exploring Physical Parameters Explaining the Apparent Source Width of Direct Sound of Musical Instruments", in: Franziska Olbertz (Ed.): 31. *Jahrestagung der deutschen Gesellschaft für Musikpsychologie (DGM)*,

https://www.researchgate.net/publication/304496623_Exploring_Physical_Parameters_Explaining_the_Apparent_Source_Width_of_Direct_Sound_of_Musical_Instruments, Oldenburg: Sep 2015, p. 40 —41.

Journal Abstracts

Ziemer, Tim & Black, David, “Psychoacoustic sonification for tracked medical instrument guidance”, in: *The Journal of the Acoustical Society of America (JASA)* 141(5), <http://doi.org/10.1121/1.4988051>, 2017, p. 3694.

Böhlke, Leonie & Ziemer, Tim, “Perception of a virtual violin radiation in a wave field synthesis system”, in: *The Journal of the Acoustical Society of America (JASA)* 141(5), <http://doi.org/10.1121/1.4988669>, 2017, p. 3875.

Ziemer, Tim, “Perceptually motivated sound field synthesis for music presentation”, in: *The Journal of the Acoustical Society of America (JASA)* 141(5), <http://doi.org/10.1121/1.4989162>, 2017, p. 3997.
[Invited Talk]

Ziemer, Tim & Bader, Rolf, “Implementing the Radiation Characteristics of Musical Instruments in a Psychoacoustic Sound Field Synthesis System”, in: *Journal of the Audio Engineering Society (JAES)* 63(12), http://www.aes.org/journal/online/JAES_V63/12/, 2015, p. 1094.

Ziemer, Tim & Bader, Rolf, “Complex point source model to calculate the sound field radiated from musical instruments”, in: *Journal of the Acoustical Society of America (JASA)* 138(3), <https://doi.org/10.1121/1.4934107>, 2015, p. 1936. **[Best Paper Award for Students and Young Presenters]**

Ziemer, Tim, “Simulating the lateral line with low-frequency nearfield acoustic holography based on a vector hydrophone array for short-range navigation in littoral waters”, in: *Journal of the Acoustical Society of America (JASA)* 138(3), <https://doi.org/10.1121/1.4933959>, 2015, p. 1897.

Ziemer, Tim, “A psychoacoustic Approach to Wave Field Synthesis”, in: *Journal of the Audio Engineering Society (JAES)* 59(5), http://www.aes.org/journal/online/JAES_V59/5/, 2011, p. 356.

Conference Abstracts

Ziemer, Tim & Schultheis, Holger, “Psychoakustische Sonifikation”, *Jahrestagung der Gesellschaft für Musikforschung 2019*, Detmold/Paderborn: Sep 2019, p. 79–79. **[Invited Talk]**

Ziemer, Tim & Schultheis, Holger, “Perceptual Auditory Display for Two-Dimensional Short-Range Navigation”, in: *Programmheft der 44. Tagung für Akustik (DAGA)*, http://2018.daga-tagung.de/fileadmin/2018.daga-tagung.de/programm/Feb_16_Programmheft.pdf, Munich: Mar 2018, p. 306.

Schultheis, Holger & Ziemer, Tim, “An auditory display for representing two-dimensional space”, in: *Spatial Cognition* 2018, https://www.researchgate.net/publication/340050716_An_auditory_display_for_representing_two-dimensional_space Abstract, Tuebingen, Sep 2018. **[Best Poster Award]**

Stirnat, Claudia & Ziemer, Tim, “Räumlichkeit in Musik: Empfehlung in der Literatur, Umsetzung in der Praxis und Wahrnehmung beim Hörer”, in: Franziska Olbertz (Ed.): *33. Jahrestagung der deutschen Gesellschaft für Musikpsychologie (DGM)*, <http://doi.org/10.13140/RG.2.2.27074.68804>, Hamburg: Sep 2017.

Black, David, Ziemer, Tim, Rieder, Christian, Hahn, Horst & Kikinis, Ron, “Auditory Display for Supporting Image-Guided Medical Instrument Navigation in Tunnel-like Scenarios”, in: *Proceedings of the 3rd Conference on Image-Guided Interventions & Fokus Neuroradiologie (IGIC)*, Magdeburg: Nov 2017.

Wöllner, Clemens & Ziemer, Tim, “Recent Research Projects Carried Out at the Institute of Systematic Musicology”, in: Rolf Großmann & Georg Hajdu (Eds.): *Proceedings of the Sound and Music Computing Conference (SMC)*,
https://smc2016.hfmt-hamburg.de/wp-content/uploads/2016/09/SMC2016_proceedings.pdf#page=7Hamburg: Sep 2016, p. V. **[Invited Talk]**

Blaß, Michael & Ziemer, Tim, “Blowing Pressure Dependent Synchronization in the Zummâra”, in: 8th *International Conference of Students of Systematic Musicology (SysMus15)*, Leipzig, Sep 2015, p. 38.

Miscellaneous

Ziemer, Tim, “Drei Sängerinnen. Insider oder Outsider? Eine Auseinandersetzung mit Outsider-Music anhand dreier Interpretinnen”, seminar work, published at: *Zentrale Bibliothek Frauenforschung & Gender Studies*, <https://beluga.sub.uni-hamburg.de/vufind/Record/787207888>, Hamburg 2009.

Over 500 articles for print and online magazines, like CHIP, FOCUS online, NetMoms, c't, and several concert programs.