

Publication List of Shigeto Furukawa (updated 10 Nov. 2022)

Original papers and Letters

- (1) S. Furukawa, S. Sekino, S. Aono, T. Matsui, K. Takagi (1994) "Changes of the auditory filter characteristics due to noise exposure", *Environ. Sanit. Eng. Res.*, 8(4), (in Japanese).
- (2) S. Furukawa, B.C.J. Moore (1996). "Across-channel processes in frequency modulation detection," *J. Acoust. Soc. Am.* 100, 2299-2311.
- (3) S. Furukawa, B.C.J. Moore (1997). "Dependence of frequency modulation (FM) detection on FM coherence across carriers: Effect of modulation rate, harmonicity and roving of the carrier frequencies," *J. Acoust. Soc. Am.* 101, 1632-1643.
- (4) S. Furukawa, B.C.J. Moore (1997). "Effect of the relative phase of amplitude modulation on the detection of modulation on two carriers," *J. Acoust. Soc. Am.* 102, 3657-3664.
- (5) L. Xu, S. Furukawa, J.C. Middlebrooks (1998). "Sensitivity of sound-source elevation in non-tonotopic auditory cortex", *J. Neurophysiol.* 80, 882-894.
- (6) L. Xu, S. Furukawa, J.C. Middlebrooks (1999). "Auditory cortical responses in the cat to sounds that produce spatial illusions", *Nature* 399, 688-691.
- (7) S. Furukawa, L. Xu, J.C. Middlebrooks (2000). "Coding of sound-source location by ensembles of cortical neurons," *J. Neurosci.* 20, 1216-1228.
- (8) L. Xu, S. Furukawa, J.C. Middlebrooks (2000). "Cortical mechanisms for auditory spatial illusions", *Acta Otolaryngol.* 120(2), 263-266.
- (9) J.G. Arenberg, S. Furukawa, J.C. Middlebrooks (2000). "Auditory cortical images of tones and noise bands," *J. Assoc. Res. Otolaryngol.* 1, 183-194.
- (10) S. Furukawa, J.C. Middlebrooks (2001). "Sensitivity of auditory cortical neurons to locations of signals and competing noise sources," *J. Neurophysiol.* 86, 226-240.
- (11) S. Furukawa, J. C. Middlebrooks (2002). "Cortical representation of auditory space: Information-bearing features of spike patterns," *J. Neurophysiol.* 87, 1749-1762.
- (12) S. Furukawa, K. Maki, M. Kashino, H. Riquimaroux, T. Hirahara (2002). "Temporal characteristics of neural sensitivities to the interaural phase difference in the inferior colliculus," *Acoust. Sci. Tech.* 23, 286-288.
- (13) S. Furukawa, K. Maki, T. Harada, T. Hirahara (2003). "Responses of neurons in the inferior colliculus to a dynamic-level stimulus that simulates a sound source with varying distance," *Acoust. Sci. Tech.* 24, 318-321.
- (14) K. Maki, S. Furukawa, T. Hirahara (2003). "Head-related transfer function of Mongolian gerbil in the median plane," *Acoust. Sci. Tech.* 24, 330-332.
- (15) K. Maki, S. Furukawa (2005). "The responses of neurons in the gerbil inferior colliculus to virtual acoustic space stimuli," *Acoust. Sci. Tech.* 26, 82-84.
- (16) S. Furukawa, K. Maki, M. Kashino, H. Riquimaroux (2005). "Dependency of the interaural phase difference sensitivities of inferior collicular neurons on a preceding tone and its implications in neural population coding," *J. Neurophysiol.* 93, 3313-3326.

- (17) K. Maki, S. Furukawa (2005) "Acoustical cues for sound localization by the Mongolian gerbil, *Meriones unguiculatus*," J. Acoust. Soc. Am. 118, 872-886.
- (18) K. Maki, S. Furukawa (2005) "Reducing individual differences in the external-ear transfer functions of the Mongolian gerbil," J. Acoust. Soc. Am. 118, 2392-2404.
- (19) S. Furukawa, K. Maki (2006) "Sensitivity of the auditory middle latency response of the guinea pig to interaural level and time differences," Hear. Res. 212/1-2, 48-57.
- (20) S. Furukawa (2008) "Detection of combined changes in interaural time and intensity differences: Segregated mechanisms in cue type and in operating frequency range?," J. Acoust. Soc. Am. 123, 1602-1617.
- (21) .X. Kato, K. Maki, S. Furukawa, M. Kashino (2008) "Development of Easier and Inexpensive Method for Flexible Multichannel Neural Electrodes," Transactions of the Japanese Society for Medical and Biological Engineering, 46(5), 522-528 (in Japanese).
- (22) T. Nishida, T. Kondo, S. Furukawa, K. Takehi (2011) "Preception of sound source motion in the presence of another moving source," J. Acoust. Soc. Jpn, 67(5), 181-188 (in Japanese).
- (23) T. Miura, T. Ifukube, S. Furukawa (2011) "Analyses of acoustic cues for the auditory perception of silent object," J. Acoust. Soc. Jpn, 67(7), 261-270 (in Japanese).
- (24) S. Furukawa (2012) "Detection of simultaneous modulation of interaural time and level differences: Effects of modulation rate and relative phase," J. Acoust. Soc. Am. 132, 1-4.
- (25) Y.X. Kato, S. Furukawa, K. Samejima, N. Hironaka, M. Kashino (2012) "Photosensitive-polyimide based method for fabricating various neural electrode architectures," Front. Neuroeng. 5:11. doi: 10.3389/fneng.2012.00011.
- (26) S. Furukawa, S. Washizawa, A. Ochi, M. Kashino (2013) "How independent are the pitch and the interaural-time-difference mechanisms that rely on temporal fine structure information?" Adv. Exp. Med. Biol. 787, 91-99.
- (27) S. Furukawa, T. Nishida, T. Kondo, K. Takehi (2013). "Insensitivity to the coherence of interaural-time-difference modulation across frequency channels," Acoust. Sci. Tech. 34, 397-403.
- (28) S. Otsuka, S. Furukawa, S. Yamagishi, K. Hirota, M. Kashino (2014). "Inter-individual variation of sensitivity to frequency modulation: Its relation with click-evoked and distortion-product otoacoustic emissions," J. Assoc. Res. Otolaryngol. 15, 175-186.
- (29) A. Ochi, T. Yamasoba, S. Furukawa (2014) "Factors that account for inter-individual variability of lateralization performance revealed by correlations of performance among multiple psychoacoustical tasks," Front. Neurosci. | doi: 10.3389/fnins.2014.00027.
- (30) C. F. Altmann, S. Terada, M. Kashino, T. Mima, H. Fukuyama, S. Furukawa (2014) "Independent or integrated processing of interaural time and level differences in human auditory cortex?," Hear. Res. 312, 121-127.
- (31) S. Kanaya, W. Fujisaki, S. Nishida, S. Furukawa, K. Yokosawa (2015) "Effects of frequency separation and diotic/dichotic presentations on the alternation frequency limits in audition derived from a temporal phase discrimination task," Perception, 44, 198-214.
- (32) H.-I. Liao, S. Kidani, M. Yoneya, M. Kashino, S. Furukawa (2016). "Correspondences among pupillary dilation response, subjective salience of sounds, and loudness," Psychon. Bull. Rev., 23(2), 412-25.
- (33) A. Ochi, T. Yamasoba, S. Furukawa, S. (2016) "Contributions of coding efficiency of temporal-structure and level information to lateralization performance in young and early-elderly listeners" Adv. Exp. Med. Biol. 894 19-28.
- (34) S. Otsuka, M. Tsuzaki, J. Sonoda, S. Tanaka, S. Furukawa (2016). "A role of medial olivocochlear

reflex as a protection mechanism from noise-induced hearing loss revealed in short-practicing violinists," *PLoS ONE*, 11(1): e0146751. doi:10.1371/journal.pone.0146751.

- (35) H.-I. Liao, M. Yoneya, S. Kidani, M. Kashino, S. Furukawa (2016). "Human pupillary dilation response to deviant auditory stimuli: Effects of stimulus properties and voluntary attention," *Front. Neurosci.*, 10, doi: 10.3389/fnins.2016.00043.
- (36) S. Yamagishi, S. Otsuka, S. Furukawa, M. Kashino (2016). "Subcortical correlates of auditory perceptual organization in humans," *Hear. Res.*, 339, 104-111.
- (37) S. Otsuka, S. Furukawa, S. Yamagishi, K. Hirota, M. Kashino (2016). "Relation between cochlear mechanics and performance of temporal-fine-structure based tasks," *J. Assoc. Res. Otolaryngol.*, 17, 541-557.
- (38) T. Petsas, J. Harrison, M. Kashino, S. Furukawa, M. Chait (2016). "The effect of distraction on change detection in crowded acoustic scenes," *Hear. Res.* 341, 179-189.
- (39) S. Yamagishi, S. Otsuka, S. Furukawa, M. Kashino (2017). "Comparison of perceptual properties of auditory streaming between spectral and amplitude modulation domains," *Hear. Res.* 350, 244-250.
- (40) C. F. Altmann, R. Ueda, S. Furukawa, M. Kashino, T. Mima, H. Fukuyama (2017) "Auditory mismatch negativity in response to changes of counter-balanced interaural time and level differences," *Front. Neurosci.*, doi: 10.3389/fnins.2017.00387
- (41) C. F. Altmann, R. Ueda, B. Bucher, S. Furukawa, K. Ono, M. Kashino, T. Mima, H. Fukuyama (2017) "Trading of dynamic interaural time and level difference cues and its effect on the auditory motion-onset response measured with electroencephalography," *Neuroimage*, , 159, 185-194
- (42) T. Koumura, S. Furukawa (2017) "Context-dependent effect of reverberation on material perception from impact sound", *Sci. Rep.*, 7, 16455.
- (43) S. Furukawa, K. Onikura, S. Kidani, M. Kato, N. Kitagawa (2018) " Light-synchronized tapping task as an objective method for estimating auditory detection threshold", *Acoust. Sci. Tech*, 39, 30-36.
- (44) T. Koumura, S. Furukawa (2018) "Do speech contexts induce constancy of material perception based on impact sound under reverberation?", *Acta Acust. united Acust.*, 104, 796-799.
- (45) S. Otsuka, S. Nakagawa, S. Furukawa (2018) "A preceding sound expedites medial olivocochlear reflex", *Acta Acust. united Acust.*, 104, 804-808.
- (46) H.-I. Liao, M. Yoneya, M. Kashino, S. Furukawa (2019). "Pupillary dilation response reflects surprising moments in music," *J. Eye Mov. Res.*, 11(2):13, doi: 10.16910/jemr.11.2.13.
- (47) T. Koumura, H. Terashima, S. Furukawa (2019) "Cascaded tuning to amplitude modulation for natural sound recognition", *J Neurosci.*, 39(28) 5517-5533.
- (48) S. Zhao, M. Chait, F. Dick, P. Dayan, S. Furukawa, H.-I. Liao (2019) "Pupil-linked phasic arousal evoked by violation but not emergence of regularity within rapid sound sequences," *Nat. Commun.*, 10(1):4030, doi: 10.1038/s41467-019-12048-1.
- (49) S. Otsuka, S. Nakagawa, S. Furukawa (2019) "Relationship between cochlear mechanics and speech-in-noise reception performance", *J. Acoust. Soc. Am.*, 146, EL265, doi: 10.1121/1.5125008.
- (50) S. Zhao, N. W. Yum, L. Benjamin, E. Benhamou, M. Yoneya, S. Furukawa, F. Dick, M. Slaney, M. Chait (2019), "Rapid ocular responses are modulated by bottom-up driven auditory salience", *J Neurosci.*, 39(39) 7703-7714.
- (51) T. Koumura, H. Terashima, S. Furukawa (2020) "Chimeric sounds with shuffled “texture” and “content” synthesized by a model of the auditory system", *Acoust. Sci. Tech.*, 41, 337-340.
- (52) H. Terashima, S. Furukawa (2020) "Examination of efficient coding model for auditory nerves during infant development", *Acoust. Sci. Tech.*, 41, 351-354.

- (53) S. Otsuka, S. Nakagawa, S. Furukawa (2020) "Relationship between characteristics of medial olivocochlear reflex and speech-in-noise-reception performance", *Acoust. Sci. Tech.*, 41, 404-407.
- (54) S. Yamagishi, M. Yoneya, S. Furukawa (2020) "Relationship of post-saccadic oscillation with the state of the pupil inside the iris and with cognitive processing", *J. Neurophysiol.*, 123, 484-495.
- (55) S. Honda, Y. Ishikawa, R. Konno, E. Imai, N. Nomiya, K. Sakurada, T. Koumura, H. M. Kondo, S. Furukawa, S. Fujii, M. Nakatani (2020) "Proximal binaural sound can induce subjective frisson," *Front. Psychol.*, doi: 10.3389/fpsyg.2020.00316.
- (56) S. Yamagishi, S. Furukawa (2020) "Factors influencing saccadic reaction time: Effect of task modality, stimulus saliency, spatial congruency of stimuli, and pupil size, " *Front. Hum. Neurosci.*, doi: 10.3389/fnhum.2020.571893.
- (57) H. Fujihira, C. Itoi, S. Furukawa, N. Kato, M. Kashino (2021) "Auditory brainstem responses in adults with autism spectrum disorder," *Clin. Neurophysiol. Pract.*, 6, 179-184.
- (58) S. Otsuka, Furukawa (2021) "Conversion of amplitude modulation to phase modulation in the human cochlea," *Hear. Res.*, 408, 108274.
- (59) S. Otsuka, Furukawa (2022) "Expectations of the timing and intensity of a stimulus propagate to the auditory periphery through the medial olivocochlear reflex," *Cereb. Cortex.*, bhac002, <https://doi.org/10.1093/cercor/bhac002>.
- (60) Y. Suzuki, H.-I. Liao, S. Furukawa (2022) "Temporal dynamics of auditory bistable perception correlated with fluctuation of baseline pupil size," *Psychophysiol.*, 59, e14028. <https://doi.org/10.1111/psyp.14028>.
- (61) H.-I. Liao, H. Fujihira, S. Yamagishi, Y.-H. Yang, S. Furukawa (2022) "Seeing auditory object: Pupillary light response reflects covert attention to auditory space and object," *J. Cog. Neurosci.*, https://doi.org/10.1162/jocn_a_01935.
- (62) H. Fujihira, C. Itoi, S. Furukawa, N. Kato, M. Kashino (2022) "Sensitivity to interaural level and time differences in individuals with autism spectrum disorder," *Sci. Rep.*, 12, 19142 (2022). <https://doi.org/10.1038/s41598-022-23346-y>.

Conference Presentations (International only)

- (1) S. Furukawa, B.C.J. Moore (1995) "Across-frequency processing of frequency modulation", British Society of Audiology Short Papers meeting on Experimental Studies of Hearing and Deafness, Oxford.
- (2) S. Furukawa, B.C.J. Moore (1996) "Across-channel processes in frequency modulation detection", 131st Meeting of Acoustical Society of America (Indianapolis).
- (3) S. Furukawa, B.C.J. Moore (1996) "Effects of relative modulator phase on the detection of amplitude modulation on two carriers", British Society of Audiology Short Papers meeting on Experimental Studies of Hearing and Deafness, Cambridge.
- (4) J.G. Arenberg, S. Furukawa, J.C. Middlebrooks (1997) "Functional imaging of the cochlea in the guinea pig auditory cortex," 27th Annual Meeting of the Society for Neuroscience (New Orleans).
- (5) L. Xu, S. Furukawa, J.C. Middlebrooks (1998) "Responses of Auditory Cortical Neurons to Sounds that Produce Spatial Illusions," 28th Annual Meeting of the Society for Neuroscience (Los Angeles).
- (6) S. Furukawa, L. Xu, J.C. Middlebrooks (1998) "Coding of sound-source location by relative spike timing between pairs of cortical neurons," 28th Annual Meeting of Society for Neuroscience (Los Angeles).
- (7) S. Furukawa, L. Xu, J.C. Middlebrooks (1999) "Spike-count differences between pairs of cortical neurons: Sensitivity to sound-source location and sound pressure level," 22nd ARO Midwinter Meeting

(St Petersburg Beach, FL).

- (8) J.G. Arenberg, S. Furukawa, J.C. Middlebrooks (1999) "Cortical Images of Sounds: Influence of Center Frequency, Level and Bandwidth," 22nd Midwinter Research Meeting of the Association for Research in Otolaryngology (St. Petersburg Beach).
- (9) L. Xu, S. Furukawa, J.C. Middlebrooks (1999) "Cortical parallels to sound-localization illusions," 22nd Midwinter Research Meeting of the Association for Research in Otolaryngology (St. Petersburg Beach).
- (10) J.G. Arenberg, S. Furukawa, J.C. Middlebrooks (1999) "Auditory cortical images of cochlear electrical stimulation," Conf. On Implantable Auditory Prostheses, p. 75, Asilomar.
- (11) B.J. Mickey, S. Furukawa, J.C. Middlebrooks (1999) "Summing Localization in the Activity of Auditory Cortical Neurons," 29th Annual Meeting of the Society for Neuroscience (Miami).
- (12) S. Furukawa, L. Xu, J.C. Middlebrooks (2000) "Neural ensemble codes for sound source location in the auditory cortex," 23rd ARO Midwinter Meeting (St Petersburg Beach, FL).
- (13) S. Furukawa, J.C. Middlebrooks (2000) "Influence of signal and masker locations on responses of cat cortical neurons," 30th Annual Meeting of Society for Neuroscience (New Orleans).
- (14) S. Furukawa, J.C. Middlebrooks (2001) "Temporal features of cortical spike patterns that transmit information about sound-source location," 31st Annual Meeting of Society for Neuroscience (San Diego).
- (15) S. Furukawa, K. Maki, H. Riquimaroux, M. Kashino (2002) "Sensitivity of inferior-collicular neurons to interaural-phase difference (IPD) in the presence of preceding sound with various IPD," 25th ARO Midwinter Meeting (St Petersburg Beach, FL).
- (16) S. Furukawa, K. Maki, M (2003) "Acoustical cues for sound localization by gerbils in an ecologically realistic environment," 26th ARO Midwinter Meeting (Daytona Beach, FL).
- (17) S. Furukawa, K. Maki, H. Riquimaroux, M. Kashino (2002) "Context dependency of responses to the interaural phase difference in the inferior colliculus," Forum Acusticum Sevilla 2002, 3rd European Congress on Acoustics (2002.9.16-20, Sevilla, Spain). [Invited]
- (18) S. Furukawa, K. Maki, M. Kashino, H. Riquimaroux, (2004) "Effects of a Preceding Tone on the Interaural-Phase-Difference Representation by Single Neurons and by Neural Populations in the Inferior Colliculus," 27th ARO Midwinter Meeting (Daytona Beach, FL).
- (19) S. Furukawa, K. Maki (2004) "Individualizing directional transfer function of gerbils towards application to physiological studies on virtual acoustic space," 27th ARO Midwinter Meeting (Daytona Beach, FL).
- (20) S. Furukawa, K. Maki (2005) "Sensitivity of the auditory middle latency response of the guinea pig to interaural level and time differences," 28th ARO Midwinter Meeting (New Orleans, LA).
- (21) K. Maki, S. Furukawa (2005) "The effects of sounds reflected from the ground on the spatial response fields of neurons in the gerbil inferior colliculus," 28th ARO Midwinter Meeting (New Orleans, LA).
- (22) K. Maki, S. Furukawa (2006) "Neural sensitivity to virtual acoustic space in the external nucleus of the gerbil inferior colliculus," 29th ARO Midwinter Meeting (Baltimore, MD).
- (23) K. Maki, S. Furukawa (2007) "The formation of the auditory space map in the midbrain pathway of the Mongolian gerbil," 30th ARO Midwinter Meeting (Denver, CO).
- (24) S. Furukawa (2007) "Detection of combined changes in interaural time and intensity differences: Comparison between low and high frequency signals," 30th ARO Midwinter Meeting (Denver, CO).
- (25) S. Furukawa, K. Maki (2008) "Transformation of neural representation of the auditory space along the collicular pathway," 31st ARO Midwinter Meeting (Phoenix, AZ).

- (26) Y.X. Kato, K. Maki, S. Furukawa, M. Kashino (2008) "A Photosensitive Polyimide based Method for an Easy Fabrication of Multichannel Neural Electrodes," 30th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (Vancouver, Canada).
- (27) Y.X. Kato, K. Maki, S. Furukawa, M. Kashino (2009), "Development of a flexible surface microelectrode array for multichannel recording of auditory evoked potentials from the rat's cortex," the XXXVI th International Union of Physiological Sciences (IUPS2009), (Kyoto, Japan).
- (28) K. Maki, S. Furukawa (2009), "Spatial selectivity of neurons in the gerbil inferior colliculus: Effects of natural and unnatural sound reflections by the ground," 32nd ARO Midwinter Meeting (Baltimore, MD).
- (29) S. Furukawa, K. Maki (2009), "Auditory-space coding by neuronal populations in the collicular pathway," 32nd ARO Midwinter Meeting (Baltimore, MD).
- (30) S. Furukawa (2009), " Modulation detection of interaural time and intensity differences: Where is the source of binaural sluggishness?," International Workshop on the Principles and Applications of Spatial Hearing (Miyagi Zao, Japan).
- (31) S. Furukawa, K. Maki (2009) "Transform of auditory space representation along the mammalian collicular pathway," Seminars in Hearing and Communication Science, University of Washington, (2009.2.13, Seattle, USA). [Invited]
- (32) K. Maki, S. Furukawa (2009), "Transformation of auditory space representation along the mammalian collicular pathway," International Workshop on the Principles and Applications of Spatial Hearing (Miyagi Zao, Japan).
- (33) Y. X. Kato, K. Maki, M. Kashino, S. Furukawa (2010), "Mismatch Negativity-like Effect Observed in Epidural Evoked Potentials of Rat Auditory Cortex," 33rd ARO Midwinter Meeting (Anaheim, CA).
- (34) A. Ochi, S. Furukawa (2010), "Correlation of individual performance in monaural and binaural temporal detection tasks," 33rd ARO Midwinter Meeting (Anaheim, CA).
- (35) K. Maki, S. Furukawa, M. Kashino, Y. X. Kato (2010), "Modification of auditory cortical evoked potentials by irradiation of near-infrared laser to cortical sub-regions," 33rd ARO Midwinter Meeting (Anaheim, CA).
- (36) S. Furukawa (2011) " Processes for interaural time and level differences: to what extent are they independent and where are they integrated?," 161st Meeting of the Acoustical Society of America (2011.5.23-27, Seattle, USA). [Invited]
- (37) T. Miura, T. Ifukube, S. Furukawa (2011) "Contribution of acoustical characteristics to auditory perception of silent object," 2011 IEEE International Conference on Systems, Man, and Cybernetics (Anchorage, AK).
- (38) M. Kashino, S. Furukawa (2011), "Sensitivities to temporal fine structure: Individual differences and underlying mechanisms," NTT-ENS Workshop (Paris, France).
- (39) S. Furukawa (2011), "Integration of auditory-motion information across cues and frequencies," NTT-ENS Workshop (Paris, France).
- (40) S. Washizawa, S. Furukawa, M. Kashino (2012), "Perceptual Learning for Temporal Fine Structure of Sounds: Do Pitch Discrimination and Sound Localization Share Common Modules?," 35th ARO Midwinter Meeting (San Diego, CA).
- (41) A. Ochi, T. Yamasoba, S. Furukawa (2012), "Comparisons Between Young and Elderly Listeners in the Performances of Basic Auditory Tasks That Rely on Temporal Fine Structure Information," 35th ARO Midwinter Meeting (San Diego, CA).
- (42) A. Ochi, S. Furukawa, S. Karino, T. Yamasoba (2012), "Threshold of temporal gap detection in patients with sensorineural hearing loss and with functional hearing loss," 1st Asian Otology Meeting (Kyoto, Japan).

- (43) S. Furukawa, S. Washizawa, A. Ochi, M. Kashino (2012), "How independent are the pitch and interaural-time-difference mechanisms that rely on temporal fine structure information?," International Symposium on Hearing (ISH 2012) (Cambridge, UK).
- (44) S. Yamagishi, T. Ashihara, S. Otsuka, S. Furukawa, M. Kashino (2013), "Neural correlates of auditory streaming in the human brainstem," 36th ARO Midwinter Meeting (Baltimore, MD).
- (45) S. Otsuka, S. Yamagishi, K. Hirota, S. Furukawa, M. Kashino (2013), "Relationship between middle-ear transmission characteristics and frequency modulation detection," 36th ARO Midwinter Meeting (Baltimore, MD).
- (46) M. Kashino, S. Furukawa, T. Nakano, S. Washizawa, S. Yamagishi, A. Ochi, A. Nagaike, S. Kitazawa, N. Kato (2013), "Specific deficits of basic auditory processing in high-functioning pervasive developmental disorders," 36th ARO Midwinter Meeting (Baltimore, MD).
- (47) S. Furukawa, T. Nishida, T. Kondo, K. Takehi (2013), "Sensitivities to the relative phase of interaural-time-difference modulations between carrier frequencies," 36th ARO Midwinter Meeting (Baltimore, MD).
- (48) S. Kanaya, W. Fujisaki, S. Nishida, S. Furukawa, K. Yokosawa (2013), "Comparisons of temporal frequency limits for cross-attribute binding tasks in vision and audition," Vision Sciences Society 13th Annual Meeting, (Naples, FL).
- (49) S. Furukawa (2013), "Sensitivities to modulator phase coherence across frequencies," An introduction to the psychology of hearing and beyond, (Cambridge, UK).
- (50) C. F. Altmann, S. Terada, M. Kashino, T. Mima, H. Fukuyama, S. Furukawa (2013) "Independent or integrated processing of interaural time and level differences in human auditory cortex?," 43rd Annual Meeting of Society for Neuroscience, Neuroscience 2013 (San Diego, CA).
- (51) S. Otsuka, S. Furukawa, S. Yamagishi, K. Hirota, M. Kashino (2014), "Inter-Individual variation of sensitivities to frequency modulation, amplitude modulation, and interaural-phase difference: Relation with click-evoked otoacoustic emissions," 37th ARO Midwinter Meeting (San Diego, CA).
- (52) S. Furukawa, S. Ikeda, R. Numata, S. Sugimoto, J. Horikawa (2014), "Modulation of the auditory-evoked potential by continuous laser irradiation: Effects of wavelength and induced temperature change," 37th ARO Midwinter Meeting (San Diego, CA).
- (53) H. Liao, M. Yoneya, S. Kidani, M. Kashino, S. Furukawa (2014), "Human pupil dilation responses to auditory stimulations: Effects of stimulus property, context, probability, and voluntary attention," 37th ARO Midwinter Meeting (San Diego, CA).
- (54) M. Yoneya, H. Liao, S. Kidani, S. Furukawa, M. Kashino (2014), "Sounds in sequence modulate dynamic characteristics of microsaccades," 37th ARO Midwinter Meeting (San Diego, CA).
- (55) S. Yamagishi, S. Otsuka, S. Furukawa, M. Kashino (2014), "Neural correlates of auditory streaming in human scalp potentials generated from the brainstem and thalamocortical auditory pathway," 37th ARO Midwinter Meeting (San Diego, CA).
- (56) S. Kidani, H. Liao, M. Yoneya, M. Kashino, S. Furukawa (2014), "Deriving the "salience level" of a target sound using a tapping technique," 37th ARO Midwinter Meeting (San Diego, CA).
- (57) S. Yamagishi, T. Ashihara, S. Otsuka, S. Furukawa, M. Kashino (2014), "The frequency-following response reflects spontaneous perceptual switching in auditory streaming," Frequency Following Response (FFR) Workshop (London, UK).
- (58) S. Yamagishi, T. Ashihara, S. Otsuka, S. Furukawa, M. Kashino (2014), "Auditory brainstem and thalamo-cortical evoked responses that correlate perceptual switching on auditory streams," 2014 ICME International Conference on Complex Medical Engineering (CME2014) (Taipei, Taiwan).
- (59) H. Liao, M. Yoneya, S. Kidani, M. Kashino, S. Furukawa (2014), "Can pupil dilation response be a marker for auditory salience?," 2014 ICME International Conference on Complex Medical Engineering

(CME2014) (Taipei, Taiwan).

- (60) S. Furukawa, H. Liao, S. Kidani, M. Yoneya, M. Kashino, (2014), "Evaluating the salience of auditory events through eyes," 7th Forum Acusticum Krakow 2014, (2014.9.7-14, Krakow, Poland) [Invited].
- (61) S. Kidani, H. Liao, M. Yoneya, M. Kashino, S. Furukawa (2015), "Effect of distractor saliency on amplitude-modulation detection task," 38th ARO Midwinter Meeting (Baltimore, MD).
- (62) S. Furukawa, K. Onikura, S. Kidani, H. Liao, M. Kato, N. Kitagawa, (2015), "An objective measure of auditory detection threshold based on a light-synchronized tapping task," 38th ARO Midwinter Meeting (Baltimore, MD).
- (63) H. Liao, S. Kidani, M. Yoneya, M. Kashino, S. Furukawa (2015), "Correspondence between pupillary dilation response and subjective rating of sound salience," 38th ARO Midwinter Meeting (Baltimore, MD).
- (64) S. Otsuka, M. Tsuzaki, J. Sonoda, S. Furukawa (2015), "Effects of short-duration instrument practice on the auditory peripheral functions of violin players," 38th ARO Midwinter Meeting (Baltimore, MD).
- (65) M. Yoneya, S. Furukawa, M. Kashino (2015), "Potential use of Microsaccade in Personal Identification," 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (Milan, Italy).
- (66) S. Yamagishi, S. Otsuka, S. Furukawa, M. Kashino (2016), "Comparison of properties of perceptual switching in auditory streaming based on spectral and temporal cues," 39th ARO Midwinter Meeting (San Diego, CA).
- (67) S. Otsuka, M. Tsuzaki, S. Tanaka, J. Sonoda, S. Furukawa (2016), "Temporary effect of short-duration acoustic exposure on human frequency following responses," 39th ARO Midwinter Meeting (San Diego, CA).
- (68) H. Terashima, S. Furukawa (2016), "A developmental analysis of infant vocalizations under a sparse-code framework," 39th ARO Midwinter Meeting (San Diego, CA).
- (69) S. Furukawa (2016), "Natural combinations of interaural time and level differences in realistic auditory scenes," 39th ARO Midwinter Meeting (San Diego, CA).
- (70) H.-I. Liao, M. Yoneya, S. Furukawa, M. Kashino (2016), "Detecting variations in music by pupil," 39th ARO Midwinter Meeting (San Diego, CA).
- (71) S. Otsuka, S. Furukawa (2016), "Conversion of amplitude modulation to phase modulation on the basilar membrane and its implication in the perceptual consequences of disrupted temporal coding," 5th Joint Meeting of Acoustical Society of America and Acoustical Society of Japan (Honolulu, HI).
- (72) S. Yamagishi, S. Otsuka, S. Furukawa, M. Kashino (2016), "Comparison of brainstem frequency-following responses associated with auditory streaming based on spectral and temporal cues," 5th Joint Meeting of Acoustical Society of America and Acoustical Society of Japan (Honolulu, HI).
- (73) H.-I. Liao, M. Yoneya, S. Kidani, S. Zhao, M. Chait, M. Kashino, S. Furukawa (2016), "Detecting auditory changes by pupillary response," 5th Joint Meeting of Acoustical Society of America and Acoustical Society of Japan (Honolulu, HI).
- (74) S. Otsuka, M. Tsuzaki, J. Tanaka, S. Furukawa (2017), "Comparison of time course of frequency following response and otoacoustic emission following short-duration acoustic exposure," 40th ARO Midwinter Meeting (Baltimore, MD).
- (75) T. Koumura, S. Furukawa (2017), "Effect of reverberation and its presentation context on material perception based on impact sounds," 40th ARO Midwinter Meeting (Baltimore, MD).
- (76) M. Yoneya, S. Zhao, M. Chait, S. Furukawa, M. Kashino (2017), "Eye-metrics: A measure of auditory distraction?," 40th ARO Midwinter Meeting (Baltimore, MD).

- (77) H.-I. Liao, S. Zhao, M. Chait, M. Kashino, S. Furukawa (2017), "How the eyes detect acoustic transitions: A study of pupillary responses to transitions between regular and random frequency patterns," 40th ARO Midwinter Meeting (Baltimore, MD).
- (78) H.-I. Liao, M. Nakatani, H. Miyazaki, S. Furukawa (2017), "Sensing frisson by material sounds," 21st Annual Meeting of Association for the Scientific Study of Consciousness (Beijing, China).
- (79) H.-I. Liao, M. Yoneya, M. Kashino, S. Furukawa (2017), "What does pupil tell about musical processing?," Conference on Music & Eye-Tracking (Frankfurt, Germany).
- (80) S. Zhao, M. Chait, S. Furukawa, H.-I. Liao (2017), "Pupil dilation responses to violation but not emergence of auditory patterns," 6th International Conference on Auditory Cortex (Banff, Canada).
- (81) M. Yoneya, H.-I. Liao, M. Kashino, S. Furukawa (2017), "Decoding the implicit mind from fixational eye movements," 24th International Display Workshop (IDW2017) (Sendai, Japan).
- (82) H. Fujihira, S. Yamagishi, H.-I. Liao, S. Furukawa (2018), "Sensitivities of pupillary dilation responses and microsaccade rates to alert sounds," 41st ARO Midwinter Meeting (San Diego, CA).
- (83) H.-I. Liao, H. Fujihira, S. Furukawa (2018), "The pupillary light response reveals the focus of auditory spatial attention," 41st ARO Midwinter Meeting (San Diego, CA).
- (84) H. Terashima, S. Furukawa (2018), "Reconsidering the efficient coding model of the auditory periphery under reverberations," 41st ARO Midwinter Meeting (San Diego, CA).
- (85) T. Koumura, H. Terashima, S. Furukawa (2018), "Representation of amplitude modulation in a deep neural network optimized for sound classification," 41st ARO Midwinter Meeting (San Diego, CA).
- (86) S. Furukawa (2018), "Eye metrics as indicators of auditory salience?," 41st ARO Midwinter Meeting (San Diego, CA) [Invited].
- (87) T. Koumura, S. Furukawa (2018), "Do speech contexts induce constancy of material perception based on impact sound under reverberation?," International Symposium on Hearing (ISH 2018) (Snekkersten, Denmark).
- (88) S. Otsuka, S. Nakagawa, S. Furukawa (2018), "A preceding sound expedites medial olivocochlear reflex," International Symposium on Hearing (ISH 2018) (Snekkersten, Denmark).
- (89) T. Koumura, H. Terashima, S. Furukawa (2018), "Single unit recording in a deep neural network reveals representation of amplitude modulation similar to the auditory nervous system," The 11th FENS Forum of Neuroscience (FENS 2018) (Berlin, Germany).
- (90) H. Terashima, S. Furukawa (2018), "Efficient coding of natural sounds at the auditory periphery with consideration of environmental modulations: a computational study," The 11th FENS Forum of Neuroscience (FENS 2018) (Berlin, Germany).
- (91) T. Koumura, H. Terashima, S. Furukawa (2018), "Emergence of auditory-system-like representation of amplitude modulation in a deep neural network trained for sound classification," 27th Annual Computational Neuroscience Meeting (CNS* 2018) (Seattle, WA).
- (92) H. Terashima, S. Furukawa (2018), "Revisiting efficient coding of natural sounds in the environment: unsupervised learning or task-based optimization?," 27th Annual Computational Neuroscience Meeting (CNS* 2018) (Seattle, WA).
- (93) T. Koumura, H. Terashima, S. Furukawa (2018), "Chimeric sounds with shuffled "texture" and "content" synthesized by a model of the auditory system," International symposium on universal acoustical communication 2018 (Sendai, Japan).
- (94) S. Furukawa, H. Terashima, T. Koumura, H. Tsukano (2018), "Data-driven approaches for unveiling the neurophysiological functions of the auditory system," Seminar on brain, hearing and speech sciences for universal speech communication (Sendai, Japan). [Invited]

- (95) H. Terashima, S. Furukawa (2018), "An examination of the efficient coding model for auditory nerves during the infant development," Seminar on brain, hearing and speech sciences for universal speech communication (Sendai, Japan).
- (96) S. Otsuka, S. Nakagawa, S. Furukawa (2018), "The relationship between characteristics of medial olivocochlear reflex and speech-in-noise-reception performance," Seminar on brain, hearing and speech sciences for universal speech communication (Sendai, Japan).
- (97) H.-I. Liao, H. Fujihira, S. Furukawa (2019), "Pupillary light response reveals covert attention to auditory space and object," 42nd ARO Midwinter Meeting (Baltimore, MD).
- (98) H. Terashima, H. Tsukano, S. Furukawa (2019), "Mapping areal organization of mouse auditory cortex by data-driven decomposition of responses to naturalistic sounds," 41st ARO Midwinter Meeting (San Diego, CA).
- (99) T. Koumura, H. Terashima, S. Furukawa (2019), "Emergence of ITD selectivity in a deep neural network trained for binaural natural sound detection," 41st ARO Midwinter Meeting (San Diego, CA)
- (100) Y. Yang, H.-I. Liao, S. Yamagishi, S. Furukawa (2019), "Pupillometry and microsaccade responses reveal unconscious processing of face information under interocular suppression," 19th Annual Meeting of the Vision Sciences Society (St. Petersburg Beach, FL)
- (101) H.-I. Liao, H. Fujihira, S. Yamagishi, S. Furukawa (2019), "Microsaccades and pupillary responses represent the focus of auditory attention," 19th Annual Meeting of the Vision Sciences Society (St. Petersburg Beach, FL)
- (102) T. Koumura, H. Terashima, S. Furukawa (2019), "‘Psychophysical’ modulation transfer functions in a deep neural network trained for natural sound recognition," International Symposium on Auditory and Audiological Research (Nyborg, Denmark).
- (103) S. Otsuka, S. Nakagawa, S. Furukawa (2019), "Effects of a preceding sound on medial olivocochlear bundle reflex as a function of the preceding time interval," 23rd International Congress on Acoustics (Aachen, Germany).
- (104) H. Terashima, S. Furukawa (2019), "Efficient codes of the auditory nerves reconsidered with natural reverberations," Advances and Perspectives in Auditory Neuroscience (APAN2019) (Chicago, IL).
- (105) H. Terashima, H. Tsukano, S. Furukawa (2019), "Data-driven auditory field mapping for mice using naturalistic sounds," Neuroscience 2019 (Chicago, IL).
- (106) T. Koumura, H. Terashima, S. Furukawa (2020), "Modulation transfer functions measured with broad- and narrow-band noise carriers in a deep neural network trained for natural sound recognition," 42nd ARO Midwinter Meeting (San Jose, CA).
- (107) S. Yamagishi, S. Furukawa (2020), "Simultaneous measures of auditory brainstem frequency following response, pupillary response, and microsaccade during auditory selective attention task," 42nd ARO Midwinter Meeting (San Jose, CA).
- (108) Y-H Yang, H-I Liao, S. Furukawa (2020), "Sensitivity of eye-metrical responses to sound salience: Contributions of detectability, signal-to-noise ratio, and spectral consistency of acoustic context," 42nd ARO Midwinter Meeting (San Jose, CA).
- (109) T. Ebina, S. Otsuka, S. Furukawa, Y. Okamoto, S. Nakagawa, T. Morimoto, Y. Fujisaka, T. Nonaka, S. Kanzaki (2020), "Phase characteristics of otoacoustic emissions evoked by amplitude-modulated low-frequency tone," 42nd ARO Midwinter Meeting (San Jose, CA).
- (110) M. Tsuzaki, Y. Matsuura, S. Otsuka, S. Furukawa, E. Yamamoto (2020), "Medial olivocochlear reflexes of musicians with various specialties," 42nd ARO Midwinter Meeting (San Jose, CA).
- (111) S. Otsuka, S. Nakagawa, S. Furukawa (2020), "Temporal expectation modulates medial olivocochlear bundle reflex," 42nd ARO Midwinter Meeting (San Jose, CA).

- (112) S. Furukawa, K. Maki (2020), "Stimulus-specific information on sound azimuth conveyed by gerbil collicular neurons," 42nd ARO Midwinter Meeting (San Jose, CA).
- (113) S. Yamagishi, S. Furukawa (2021), "To what extent do visual- and auditory-targeting saccades share common mechanisms?," 43rd ARO Midwinter Meeting (Online).
- (114) T. Koumura, H. Terashima, S. Furukawa (2021), "Temporal modulation transfer function based on time-averaged responses of units in a neural network model," 43rd ARO Midwinter Meeting (Online).
- (115) S. Otsuka, S. Nakagawa, S. Furukawa (2021), "Effect of probability of stimulus occurrence on medial olivocochlear bundle reflex," 43rd ARO Midwinter Meeting (Online).
- (116) L. K. Fink, P. Janata, S. Ganapathy, S. Furukawa, E. B. Lange (2021), "Pupillary entrainment predicts listeners' ratings of absorption," ICMPC-ESCOM2021 (Online).
- (117) Y. Suzuki, H.-I. Liao, S. Furukawa (2022), "Temporal dynamics of auditory bistable perception and baseline pupil size," 44th ARO Midwinter Meeting (Online).

Review articles (English only)

- (1) S. Furukawa, J.C. Middlebrooks (2001) "Cortical codes for sound localization," *Acoust. Sci. Tech.* 22, 69-76.
- (2) J.C. Middlebrooks, L. Xu, S. Furukawa, E.A. Macpherson (2002) "Cortical neurons that localize sounds," *Neuroscientist*, 8; 73-83.
- (3) M. Kashino, M. Yoneya, H-I Liao, S. Furukawa (2014) "Reading the Implicit Mind from the Body," *NTT Technical Review*, 12(11).
- (4) S. Furukawa, S. Yamagishi, H-I Liao, M. Yoneya, S. Otsuka, M. Kashino (2015) "Biological Measures that Reflect Auditory Perception," *NTT Technical Review*, 13(11).
- (5) T. Yamada, S. Takahashi, F. Naya, T. Ikebe, S. Furukawa (2016) "Artificial Intelligence Research Activities and Directions in the NTT Group," *NTT Technical Review*, 14(5).
- (6) S. Furukawa, M. Yoneya, H-I Liao, M. Kashino (2016) "The Eyes as an Indicator of the Mind—A Key Element of Heart-Touching-AI," *NTT Technical Review*, 14(5).
- (7) S. Furukawa, H. Terashima, T. Koumura, H. Tsukano (2020) "Data-driven approaches for unveiling the neurophysiological functions of the auditory system", *Acoust. Sci. Tech*, 41, 63-66.

Books / book chapters (English only)

- (1) J.C. Middlebrooks, L. Xu, S. Furukawa, B.J. Mickey (2000) "Location signaling by cortical neurons," in *Integrative Functions in the Mammalian Auditory Pathway* (ed. Oertel, Popper, Fay), Springer Handbook for Auditory Research, New York: Springer-Verlag, 319-357.
- (2) J.C. Middlebrooks, S. Furukawa, G. C. Stecker, B.J. Mickey (2005) "Distributed representation of sound-source location in the auditory cortex," in *The auditory cortex: a synthesis of human and animal research* (ed. König, Heil, Budinger, Scheich), Mahwah: Lawrence Erlbaum Associates, 225-240.
- (3) S. Furukawa, S. Washizawa, A. Ochi, M. Kashino (2013) "How independent are the pitch and the interaural-time-difference mechanisms that rely on temporal fine structure information?" in *Basic Aspects of Hearing* (ed. Moore et al.), New York: Springer, 91-99. (Proceedings of the 16th International Symposium on Hearing, also regarded as an article in *Adv. Exp. Med. Biol.* 787)
- (4) A. Ochi, T. Yamasoba, S. Furukawa, S. (2016) "Contributions of coding efficiency of temporal-structure and level information to lateralization performance in young and early-elderly

listeners" in *Physiology, Psychoacoustics and Cognition in Normal and Impaired Hearing* (ed. Van Dijk et al.), Springer, 19-28. (Proceedings of the 17th International Symposium on Hearing, also regarded as an article in *Adv. Exp. Med. Biol.* 894)

Invited Talks (International only)

- (1) S. Furukawa, K. Maki, H. Riquimaroux, M. Kashino (2002) "Context dependency of responses to the interaural phase difference in the inferior colliculus," *Forum Acusticum Sevilla 2002*, 3rd European Congress on Acoustics (2002.9.16-20, Sevilla, Spain).
- (2) S. Furukawa, K. Maki (2009) "Transform of auditory space representation along the mammalian collicular pathway," *Seminars in Hearing and Communication Science*, University of Washington, (2009.2.13, Seattle, USA).
- (3) S. Furukawa (2011) "Processes for interaural time and level differences: to what extent are they independent and where are they integrated?," *161st Meeting of the Acoustical Society of America* (2011.5.23-27, Seattle, USA).
- (4) S. Furukawa, H. Liao, S. Kidani, M. Yoneya, M. Kashino, (2014), "Evaluating the salience of auditory events through eyes," *7th Forum Acusticum Krakow 2014*, (2014.9.7-14, Krakow, Poland)
- (5) S. Furukawa (2018), "Eye metrics as indicators of auditory salience?," *Symposium: Understanding auditory salience*, 41st ARO Midwinter Meeting (2018.2.13, San Diego, CA).
- (6) S. Furukawa, H. Terashima, T. Koumura, H. Tsukano (2018), "Data-driven approaches for unveiling the neurophysiological functions of the auditory system," *Seminar on brain, hearing and speech sciences for universal speech communication* (2018.10.29 Sendai, Japan).

Media appearance (non-Japanese only)

- (1) Featured Content on The Psychonomic Society's web page, <http://www.psychonomic.org/featured-content-detail/drawing-curtains-of-windows-into-soul> (2015.8.31)

Activities

- (1) Executive council member, editorial board member, award committee member, reviewing committee member, session chair of annual meeting, etc., of the Acoustical Society of Japan
- (2) Editorial board member, *Trends in Hearing*