

Publication List of Shigeto Furukawa (updated 13 Oct. 2011)

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) "The 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) "Dependence 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) Y.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. Kakehi (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).

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, 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 (Sevilla, Spain).
 - (17) 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).
 - (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, and 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) K. Maki, and 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).
- (32) Y. X. Kato, K. Maki, M. Kashino, and S. Furukawa (2010), "Mismatch Negativity-like Effect Observed in Epidural Evoked Potentials of Rat Auditory Cortex," 33rd ARO Midwinter Meeting (Anaheim, CA).
- (33) A. Ochi, and S. Furukawa (2010), "Correlation of individual performance in monaural and binaural temporal detection tasks," 33rd ARO Midwinter Meeting (Anaheim, CA).
- (34) K. Maki, S. Furukawa, M. Kashino, and 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).
- (35) 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 (Seattle, WA).
- (36) T. Miura, T. Ifukube, and S. Furukawa (2011) "Contribution of acoustical characteristics to auditory perception of silent object," 2011 IEEE International Conference on Systems, Man, and Cybernetics (Anchorage, AK).

Reviews (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) S. Furukawa, J.C. Middlebrooks (2001) "Cortical codes for sound localization," *Acoust. Sci. Tech.* 22, 69-76.
- (3) J.C. Middlebrooks, L. Xu, S. Furukawa, E.A. Macpherson (2002) "Cortical neurons that localize sounds," *Neuroscientist*, 8; 73-83.
- (4) 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.

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).