



Journal of the AUDIO ENGINEERING SOCIETY CALL for PAPERS



SPECIAL ISSUE ON HIGH-RESOLUTION AUDIO

Guest Editor
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From the beginning of the digital era, a quest in music reproduction has been the faithful retention of detail, nuance, and the emotional impact of music throughout the stages of capture and processing from analog to digital encoding and back to analog. High resolution digital formats arose in the 1990s. They were the result of a number of factors but especially of earlier experimentation indicating they were audibly superior to the CD format. In the 20 years following, there has been a progression of formats, experimentation and advances in signal processing, psychoacoustic testing, and hardware evolution all very much keyed to vigorous debate about what exactly makes high resolution different from the CD, how the human auditory system encodes and processes resolution, and how best to align signal handling at all stages with the ear's requirements. A full understanding of the cognitive science behind perception lies in future research but engineering and design, especially in the last ten years, has moved toward a coalescence of thought on what signal and system properties influence the preservation of nuance and accurate detail at the ear.

This special issue invites research papers as well as insightful modern reviews covering the numerous aspects of high resolution formats and their design principles, recording, signal processing, hardware and system analysis, auditory testing, and neuroscience models of the cognitive processing of signals.

PROPOSED TOPICS

Design of converters, loudspeakers, microphones, and amplifiers for high resolution signals

Advances in digital filter design

Signal processing, system design, and system analysis for high resolution signals

Sampling theory: Shannon and non-Shannon based methods and their consequences

Processing for preservation of short duration events

Psychoacoustic tests and perceptual models of high resolution audibility

Perceptual tests on the audibility of anti-alias filters

Modeling and testing of fine time and frequency encoding in the human auditory system

Perceptual testing of sound quality

e.g. the importance of aspects such as dynamics, spatial resolution, clarity, timing accuracy, and detail refinement to listener involvement

Current and future distribution methods for high quality audio including streaming

Hierarchical encoding for bit rate reduction

Coding space models based on dynamic range and frequency

AUTHOR GUIDELINES

Submit complete 4- to 8-page papers by 2018 February 15. All submissions will be peer reviewed according to standard AES review procedures. Authors who wish to submit already-published papers relating to this topic may do so provided that they are revised and expanded as stated in our Author Guidelines found at: <http://www.aes.org/journal/authors/guidelines/>. Papers should be submitted online at: <http://www.aes.org/journal/submit/>. When submitting a paper, please do so under the article category "Special Issue (High Resolution Audio)" rather than "Research Paper" or "Engineering Report". The target publication date for this special issue is July/August 2018, and a strict reviewing and revision schedule will be introduced to this end, although this date is subject to possible change.

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