

AES High Res Technical Committee meeting, 147th Convention, NYC, Oct. 18, 2019

Attending:

John Dawson	Jade Electronics
Peter Lee	Bose
Claes Rosen	Spotify
Oles Protsidym	ProStudioMasters
Hyunkook Lee	Univ. of Huddersfield
Vicki Melchior	Consultant

Discussion at the meeting began with a review of future TC events and then moved to an informal presentation from Hyunkook Lee on the listening tests he has started.

Future TC events:

1. Two hardware tutorials were suggested previously, one on loudspeakers concerning the characteristics that make a loudspeaker suitable for high resolution, and a second on converters incorporating modern design issues and solutions.

Hans van Maanen sent a tentative proposal for a loudspeaker event but the proposal needed preliminary research that unfortunately is beyond the scope of AES committees. Regarding a converter tutorial, no one contacted so far has been interested in undertaking this but please send suggestions if you have them.

2. For Vienna next spring, several events are underway. (a) Bob Stuart plans a tutorial based on the dither paper he and Peter Craven published in the May special issue of JAES (“The Gentle Art of Dithering”). (b) Jamie Angus has proposed a tutorial on “Transform Processing of Audio; The Good, The Bad and The Ugly”. (c) A workshop is under consideration based on ideas emerging from the papers in the May high res JAES issue. This might center on a topic like “what is high resolution?”

Listening tests:

Listening tests remain a strong interest owing to the fact that high res discrimination testing in the past has been difficult to do and questions have arisen on methodology, especially standard ABX. Hyunkook and Bob Katz proposed tests last year on a related, difficult discrimination problem involving detection of reverb in noise. They intended to measure the just-noticeable-difference (JND) level of reverb for each participant using a 2AFC test, and then compare performance with ABX tests using the JND level as stimulus. Expectations were that listeners would fail ABX because of the greater insensitivity, bias, and listener fatigue.

Hyunkook described his results to date. After measuring JNDs, ABX tests were split into two types, the first with no repeats allowed, i.e. listen once to A,B,X per trial. And the second with the same ABX set but with unlimited switching and repeating allowed per trial, as recommended in the ITU-R-B.1116 ABX protocol. The “listen once” method is typical of signal detection theory designs.

Hyunkook said that he and his students passed the first test (no repeats) but failed the one with unlimited switching. They found the simpler test to be easier and much less fatiguing, although higher statistics are needed. In addition to the fatigue factor and acuity loss, he mentions the possibility that the listener's bias criterion is changing during extended switching, creating more false alarm probabilities and guessing. Work on this will continue.