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Subject: Is 16/44 high enough?

Posted by [SASAudioLabs](#) on Tue, 28 Jul 2009 22:27:14 GMT

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Dear Gents,

I created a new topic, so please disregard my response under "Vinyl vs CD".

If I may I would like to present some papers from Dr. Kunchur from the University of South Carolina. These papers took 5 years to complete and I will let Dr. Kunchur state the rigors of creating them. (I created more paragraphs to make it easier to read.)

"An experiment has to be carefully thought out and then submitted as a proposal to an Institutional Review Board (IRB) and approved by them before it can even begin. Then optimum equipment, methods, and a multitude of cross checks has to be developed (if you read my papers in their entirety, you will appreciate what went in).

The results, analysis, and conclusions are then carefully considered and discussed with colleagues who are experts in their related interdisciplinary fields; for this I went in person to various universities and research institutes and met with people in departments of physics, engineering, psychology, neuroscience, music, communications sciences, physiology, and materials science.

After that the results and conclusions were presented at conferences of the Acoustical Society of America (ASA), Association of Research in Otolaryngology (ARO), and American Physical Society (APS). Seminars were also made at numerous universities and research/industrial institutions (please see the list on my web site).

After each presentation, the audience is free to tear apart the conclusions and ask all possible questions. Eminent people such as presidents of the above mentioned societies and corporations (ASA, ARO, Bose corporation, etc.) have been present during my presentations.

After passing through this grueling oral presentation process, written manuscripts were then submitted to journals. There, anonymous referees are free to attack the submission in any way they want. More than a dozen referees and editors have been involved in this journal refereeing process.

Only after everyone is satisfied with the accuracy of the results and all statements made in the manuscript, are the papers published in the journals. The entire process took around 5 years from initial concept to refereed publications."

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Here are a couple of quotes from "Probing the temporal resolution and bandwidth of human hearing".

"Furthermore the present work shows that typical instrumentation

used in psychoacoustic research may, for some purposes, have insufficient temporal speed and bandwidth. Also this work proves that that digital sampling rates used in consumer audio are insufficient for fully preserving transparency."

#### "CONCLUSION

This research found audibility of temporal alterations on a ~5 US (microsecond) time scale. On the one hand this confirms anecdotal claims in high-end audio that performance in the ultrasonic range is required to maintain fidelity in the audible range. On the other hand it also points to the need for higher bandwidths in apparatus used in psychoacoustic research for certain types of experiments, so that the thresholds measured are not affected by the limitations of the equipment."

Here are some links to Dr. Kunchur's credentials.

Resume:

<http://www.physics.sc.edu/kunchur/resume.pdf>

Links page to papers.

<http://www.physics.sc.edu/kunchur/Acoustics-papers.htm>

<http://www.physics.sc.edu/kunchur/>

Further explanation of Papers.

<http://www.physics.sc.edu/kunchur/papers/FAQs.pdf>

Take care.

Steve