

Concert hall acoustics matching experiment

Tapio Lokki ¹, Laura McLeod ², Antti Kuusinen ³
Aalto University, POBox 13000, 00076 Aalto, Finland

ABSTRACT

As an audience member and an acoustician, we often have strong opinions about the space we are hearing our favourite piece of music in. It's been shown in previous studies that some people prefer more enveloping, wider halls and some prefer halls with more clarity and less reverberation. However, how reliable are these subjective preferences? Can people notice significant differences between concert halls when a different piece of music is played? How significant is our acoustic memory in all of these discussions? To answer to these questions, a study was carried out to see if participants could match concert halls when both same and different pieces of music were used in auralizations. The matching task was performed with multichannel auralization system and four different concert halls at a time had to be paired. The test was carried out at both a mid-position in the hall and a close position. The results show that the recognition of halls was not obvious and it was even hard in a close position. The confusion matrices revealed that subjects could quite reliably separate shoebox halls from others, but confusion happened within the hall type.

¹tapio.lokki@aalto.fi

²laura.mcleod@aalto.fi

³antti.kuusinen@aalto.fi