

ACOUSTICS2008/974
Measurements of head-related transfer function in sagittal and frontal coordinates

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3D sounds can be generated by using a head-related transfer function (HRTF), which is defined as the acoustic transfer function between a sound source and the entrance to the ear canal. Since HRTF depends on a subject and the sound source direction, many HRTF measurements were conducted. In most case, HRTFs were measured in horizontal coordinates. However, HRTF measurements in other coordinates are also useful. In previous researches, HRTFs measured in sagittal coordinates were used to investigate the relation between spectral cues and vertical angle perception. Although HRTF measurement in frontal coordinates is rarely conducted, there is an advantage to measure HRTFs densely in the front and rear where sound localizations are very sensitive. Therefore, we measured HRTFs for about 2,300 directions in sagittal and frontal coordinates and constructed a database. The measurements were conducted in a soundproof chamber with two head-and-torso simulators (B&K 4128 and KEMAR). The HRTF database can be downloaded at <http://www.sp.m.is.nagoya-u.ac.jp/HRTF/> .