Morphological Investigation of the Differences on the Ear-to-Ear Path Gain and the Packet Loss at 2.45 Ghz - DTU Orbit (14/04/2019)

**Morphological Investigation of the Differences on the Ear-to-Ear Path Gain and the Packet Loss at 2.45 Ghz**

The effect of the anatomical variation of the head on the ear-to-ear communication at 2.45 GHz has been investigated. Several anatomical characteristics of the head, such as the dimensions and the position of the ears, have been recorded for a group of 25 test persons. Active Packet Error Rate (PER) measurements have been made by the use of digital Hearing Instruments (HI) as small wireless platforms in both indoor and outdoor environments. Two fundamentally different antenna configurations are compared. It is found that there is an effect of the distances over-the-top, around-the-front and around-the-back on the PER, due to constructive and destructive interference between surface waves that propagate along the different paths. The effect is different for the two different antenna types.

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