

Dr. Florian Denk

Minimising the occlusion effect using a closed coupling – passive and active approaches

For best possible performance, hearing aids should be coupled to the ear using an occluding fit. One reason why this is often avoided in practice is the occlusion effect – by occluding the ear, the wearer's own voice and other body-generated sounds are amplified, which is annoying for the user. Besides the classic opening of the ear canal, there are different approaches to reduce this problem also using closed coupling. On the one hand, special earmould designs tailored to the individual geometry can avoid that body-generated sounds are guided into the residual ear canal thus reducing the occlusion effect. On the other hand, it is possible to reduce the occlusion effect employing active signal processing similar to the well-known Active Noise Cancellation (ANC). Many headphones with additional quasi hearing aid functionalities actually include such a feature. In this contribution I shall review the basics of both means to reduce the occlusion effect, and discuss their effectiveness based on recent evaluation studies.