

Better hearing in noise with binaural prostheses inspired by the contralateral medial olivocochlear reflex

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Abstract

In natural hearing, cochlear mechanical compression is dynamically adjusted via the medial olivocochlear efferent reflex (MOCR). These adjustments probably help understanding speech in noisy environments and are not available to the users of cochlear implants (CIs). I will present a bilateral CI sound processing strategy that reinstates the effects of the contralateral MOCR to CI users using frequency-specific, contralaterally controlled dynamic compression. The new strategy significantly facilitates understanding speech in competition with noise in bilateral and unilateral listening conditions, and enhances spatial release from masking. The strategy may be usefully applied in hearing prostheses.

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