**License and disclaimer**

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**Content**

The cochlear model can be run using ‘*Saremi2015.m*’ script. This script yields the frequency response and the position-frequency map of the cochlea. The fundamentals of this model have been described in Saremi and Stenfelt (2013). However, the code has evolved significantly since that publication.

‘*diagnosis\_HL.m*’ script takes in an audiogram as an input runs the Nelder-Maud optimization method to find cochlear pathologies that have caused the given hearing threshold elevations, according to the model.

**Examples**

1. ‘*Reproduce\_OHC\_diagnosis*’ runs the ‘*diagnosis\_HL.m*’ for real-world clinical cases and shows how the model relates hearing loss (in form of audiometric threshold elevations) to specific configuration of OHC lesions. This script produces Fig. 2 and Fig. 3 in Saremi et al. (2023).

**System requirements**

The code has been evaluated on MATLAB 2022a version. It is advised to use multiple-core fast computer systems when running the Nelder-Maud optimization since this is a computationally heavy code.