

# Implementation and Evaluation of an Adaptive Beamformer-based Auditory Model

## **Abstract**

The present study is a kick-off for a bigger project with the aim to study the auditory processes of reverberant sounds. In the present study an adaptive beamformer has been integrated into an auditory model framework. The model presented in the report can be seen as a psychoacoustic based model with some physiological relevance.

The model presented was implemented and tested in Matlab. The test consists of three different cases: a target at different locations; a target at zero degree and a correlated masker at different locations. All locations are in the horizontal (azimuth) plane.

Some psychoacoustic correlates were found e.g.; adaptation of the system; relevant suppression levels; a delay of  $> \sim 8$  ms between a target and a correlated masker, where the masker is perceived as independent of the target.

Although psychoacoustic correlates have been found, the model needs to be evaluated further and should also be expanded with more modelling elements.

**Keywords:** binaural modelling, Griffiths-Jim, psychoacoustic correlates

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