Discussion & Conclusion

We attempted to model the plasticity of the connectivity between the neural populations as the function of the stimulation repetition. The N100 is sensitive to the STH. With our model framework we were able to fit the auditory N100 component and its decreasing amplitude during receptive stimulation. With this simplified model, which we focused only on the dynamic of the N100 component and we did not attempt to fit earlier components such as P50 and later components such as P200, P300 etc. In order to keep the balance between the model complexity and the fitting we chose only two columns to model the whole AEF, which onits a lot of signal details. Of course, one could use a more detailed model that includes more sources, but then we would also need more data. Here, we provide proof of principle that the suggested mechanism is capable of predicting the habituation effect.

The feature of the classical neuronal mass model is that it links the EEG/MEG signal with physiological parameters. Extending the model with a subsystem, which describe the slow change of the parameters, can simulate learning process such as habituation. Combining forward modeling and the Bayesian inverse method could be useful to investigate physiological parameters and the underlying neuronal mechanisms.


table

Reference