

Description CI coding strategy CIS and n-of-m

This coding strategy is based on the description of Nogueira et. al (2005). The package includes four coding examples: 1. CIS with all electrodes activated, 2. CIS with electrode 7 and 8 switched off, 3. N-of-m with 7 electrodes active in one cycle, 4. FL-F0F1F2.

In the script START_STIMULATION.m variables can be adjusted and the coding strategy can be chosen and started. For each strategy a separate parameter file exists.

Variables of START_STIMULATION.m:

Strategy: 1, 2 or 3 as described above.
T_Thresh: Threshold in CU
C_Thresh: Comfortable level in CU
CalibLevel: x dB above base level. According to the level the RMS of the input wav file is calibrated.

Variables of Parameter file:

m: Fix for Med EL (12)
nDeactivated=[]: Electrode number that is deactivated
n: Number of stimulated electrodes in one Cycle. Has to be adjusted if n-of-m strategy is used OR if electrodes are deactivated.
Pps: 1x12 vector. Pulse rate needs to be equal for all electrodes.
ipg: Inter phase gap (μ s)
PulseWidth: Width of one pulse phase
CIFs: Sampling rate of Input sound file
Sequence: Order in which electrodes are stimulated
T: Defined in START_STIMULATION.m
C: Defined in START_STIMULATION.m
B: Base level. Level that is mapped to individual T-Level
M: Maximum Level. Level that is mapped to individual C-level
CompFac: Compression Factor for loudness growth function
vol: Limits C Level and therefore dynamic range. 1 = 100 %

From the script START_STIMULATION.m the function CISTrat.m is run. The Output of CISTrat.m can directly be used for the Wrapper for direct stimulation of MED EL electrode arrays.

REFERENCE

Nogueira, W., B. Tüchener, A., Lenarz, T., & Edler, B. (2005). A psychoacoustic nofm-type speech coding strategy for cochlear implants. EURASIP Journal on Applied Signal Processing, 2005, 3044–3059.