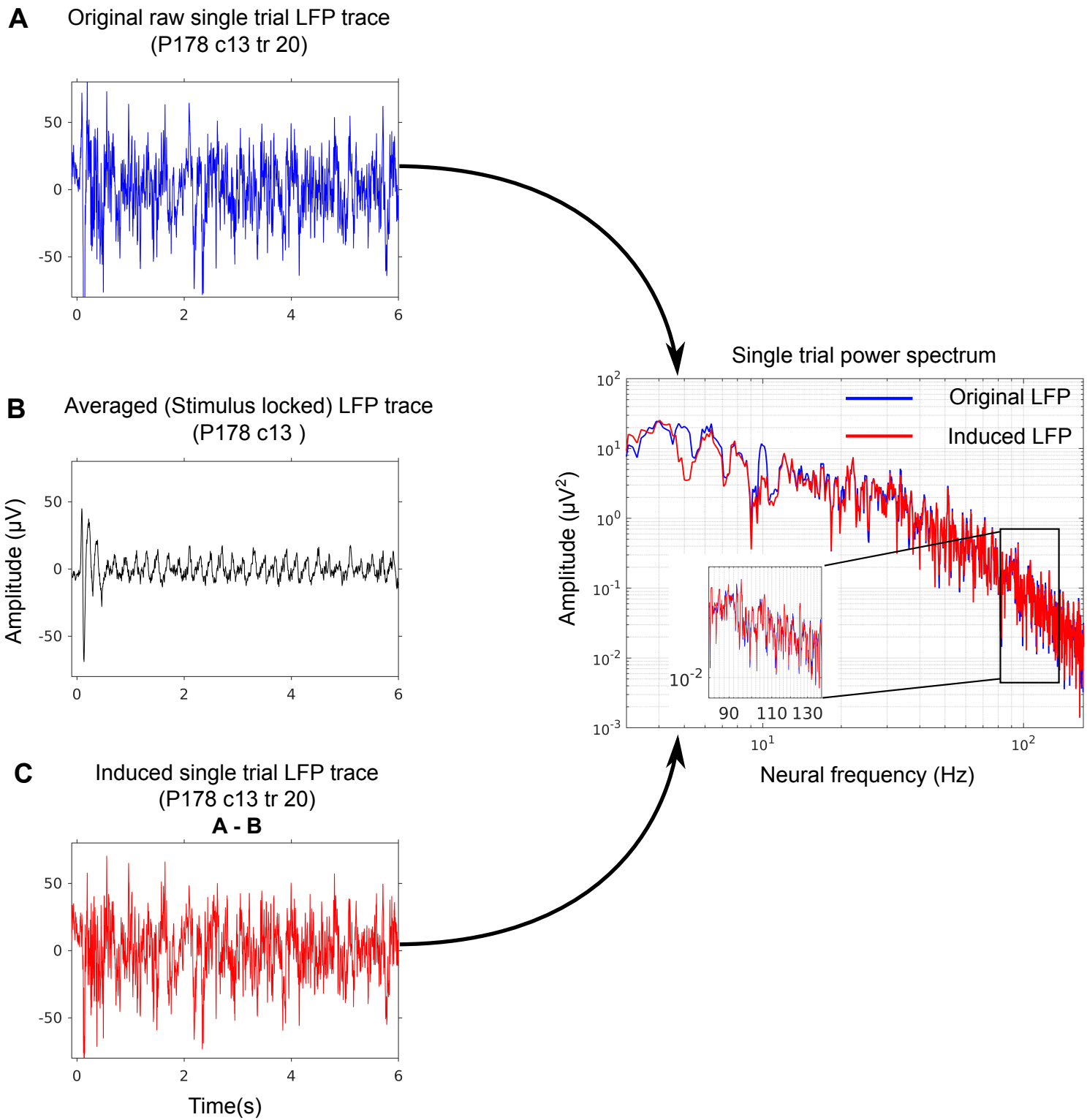
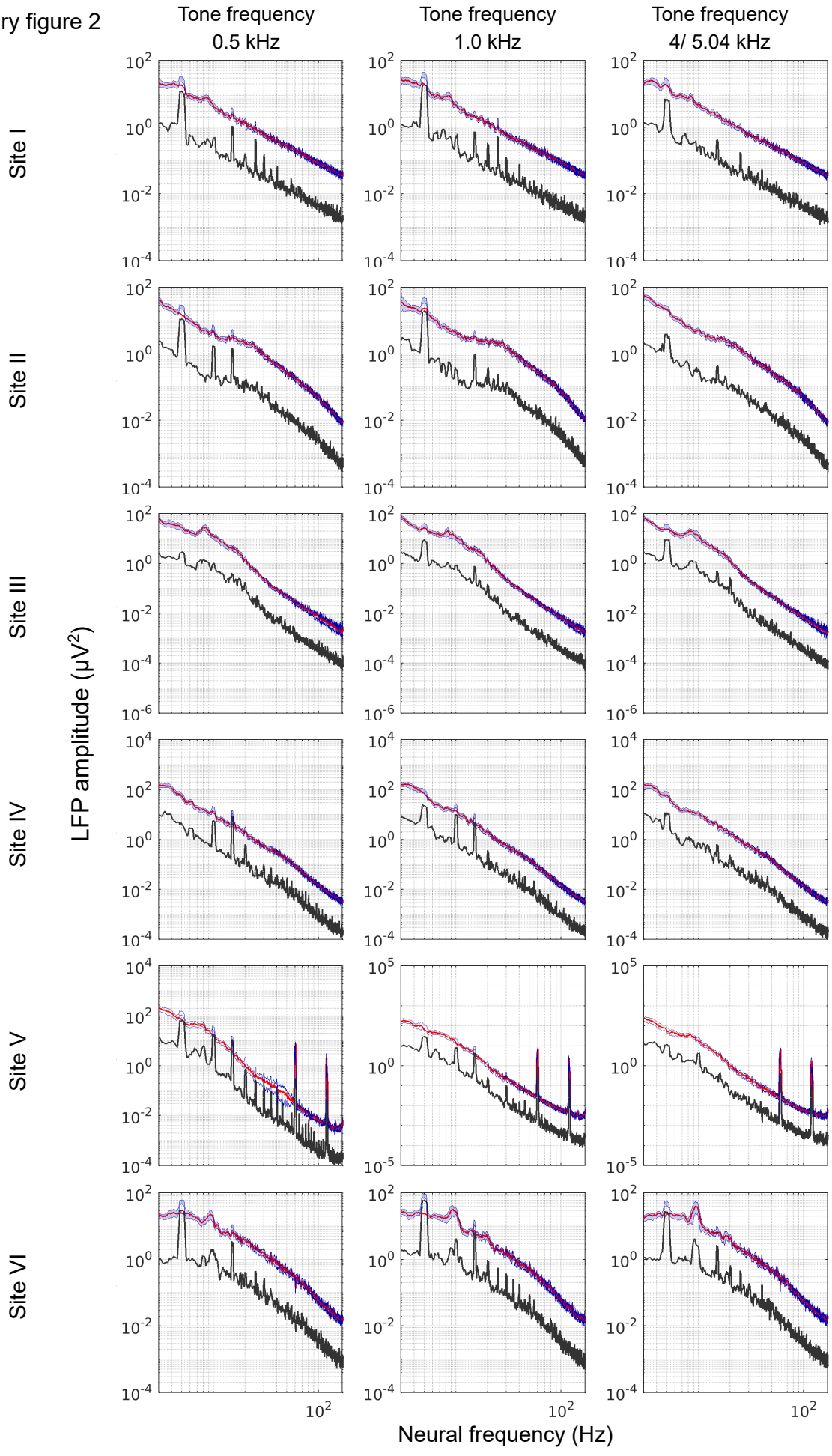
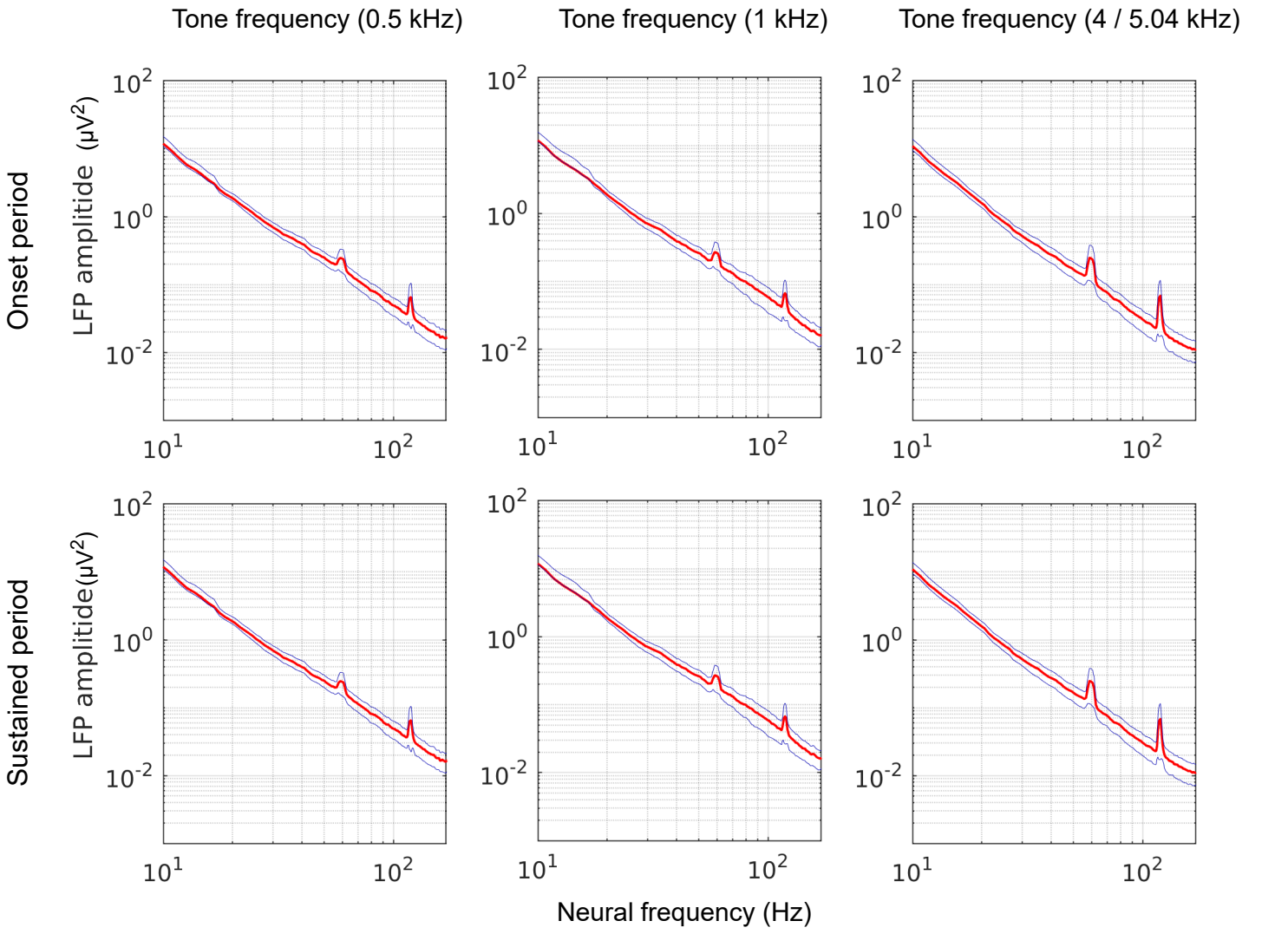


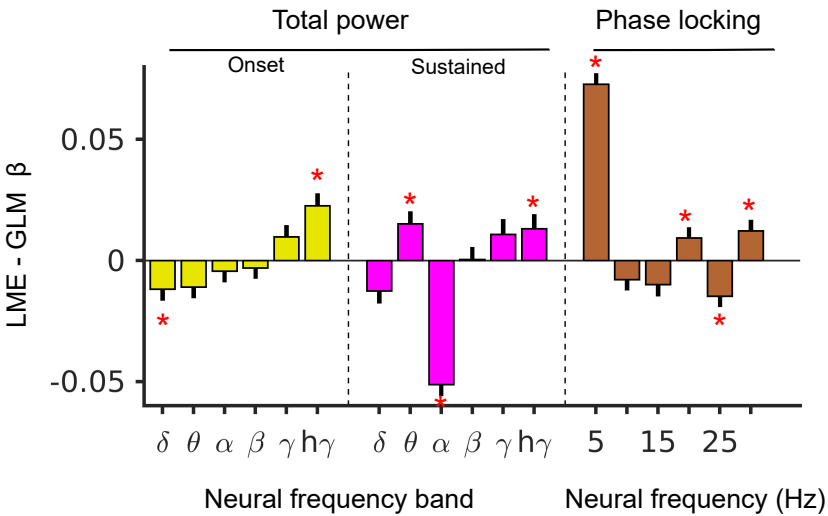
Supplementary figure 2



Supplementary figure 3



Supplementary figure 4



Supplementary figure 5

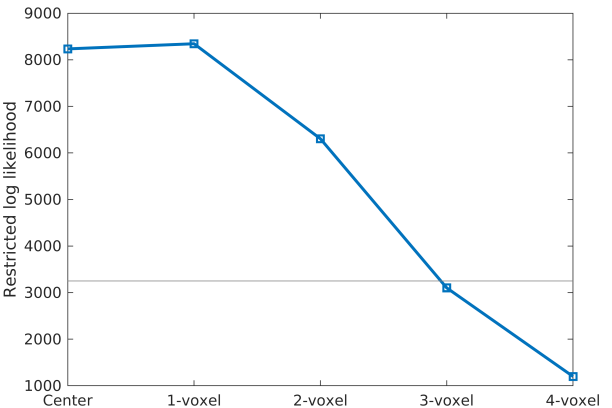


Figure legends for supplementary figures

Supplementary figure 1. Effect of averaged potential subtraction of the power spectrum in a single trial. ***A.*** Raw single-trial LFP waveform. ***B.*** Averaged potentials calculated from all trial in this session. ***C.*** Subtraction of averaged potential from the raw-LFP (waveform A – waveform B). Power spectrums for both raw- (Blue) and induced- (Red) LFP is plotted in the right panel. No difference was apparent in the gamma/high-gamma neural frequency range.

Supplementary figure 2. Effect of averaged potential subtraction of the power spectrum in an experimental session. For all sites presented in the main text (site I – VI). In all sites, there no significant change in the power spectrums in gamma/high-gamma neural frequency range (within mean+- 2SE).

Supplementary figure 3. Effect of averaged potential subtraction of the power spectrum overall. For all LFP recording sites in the gray matter, mean power spectrums for 3 tone stimuli are calculated for raw- and induced- LFPs for onset and sustained period separately. There is no significant deviation of induced power (Red) from the raw-LFP power (gray) (within mean+- 2SE) in gamma/high-gamma neural frequency range.

Supplementary figure 4. LME-GLM results on the original-LFP dataset. Identical linear mixed effect GLM is performed on the original LFPs. The result is similar to the LME-GLM results on the induced-LFP dataset (see main Fig. 10). Asterisks show statistically significant LFP features ($P < 0.05$).

Supplementary figure 5. Effect of voxel shift on the LME-GLM fitting. The same LME-GLM fittings were applied to the voxel-shifted non-smoothed fMRI data sets and restricted log likelihood is plotted. X-axis indicates amount of shifts of functional volume. Gray horizontal line indicated 95 % limit calculated from 200 LME-GLM fittings performed on the shuffled datasets.