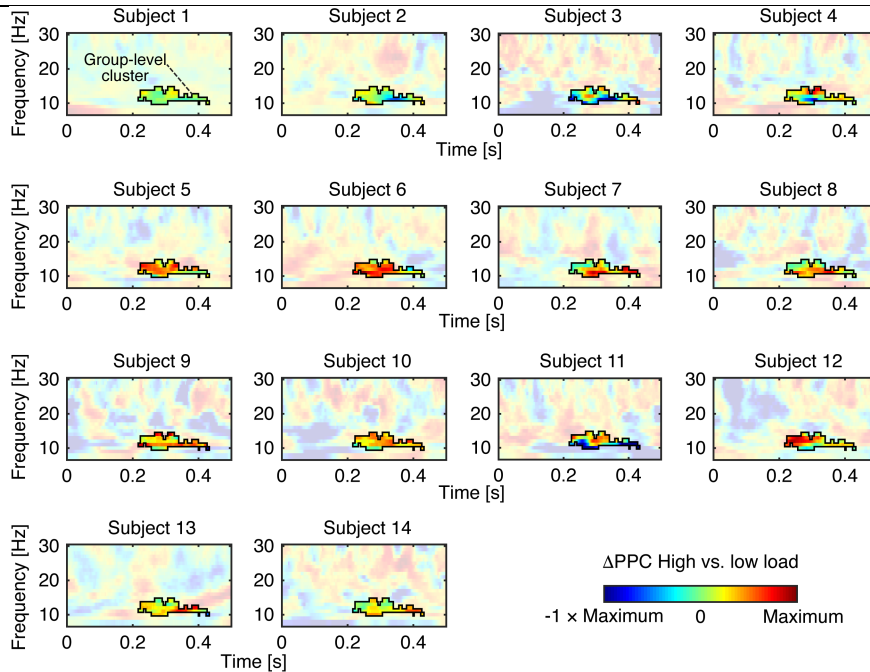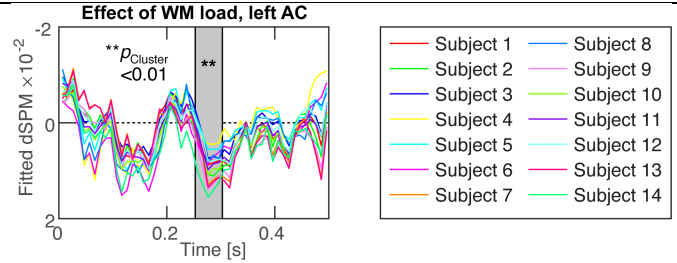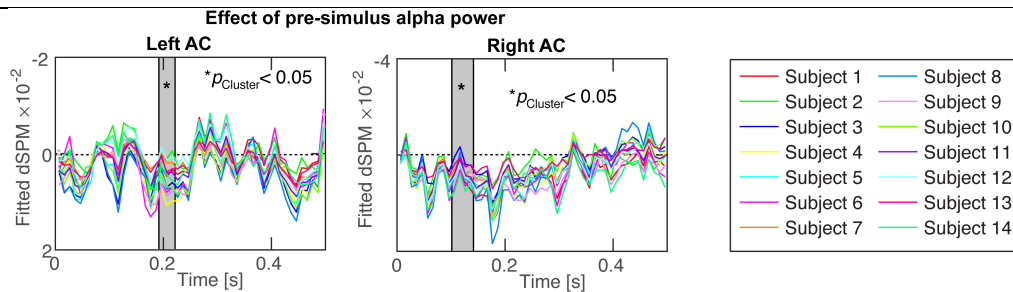# Supplementary Materials

Supplementary Figure 1. Individual-subject data on the effects of contextual WM load on AC activations during the Q–A periods. The waveforms reflect the modeled differences in filler-evoked activations during high vs. low WM load in each subject. At the group level, the reduction of negative AC activity was significant during the shaded period ($p<0.01$, cluster-based randomization test; see **Fig. 2b, c**). The vertical axes ("fitted dSPM") reflect GLME-modeled values in arbitrary statistical units.

Supplementary Figure 2. Oscillatory PPC results individual subjects during the Q–A periods. The data show time-frequency representations of the differences in PPC (ΔPPC) between the left DLPFC and left AC during trials with high vs. low contextual WM maintenance load. The time-frequency region showing significant alpha-range PPC at the group level has been encircled in each subject (cluster-based randomization test, $p<0.01$; see **Fig. 2d**). The representations have been scaled in each subject based on their individual maximum connectivity difference.

Supplementary Figure 3. Individual-subject data on the effect of pre-stimulus alpha power on AC activations during the Q–A periods. The waveforms depict the modeled differences in responses to filler sounds across trials within the highest *vs*. lowest quintiles of pre-stimulus alpha-power in each subject. At the group level, negative AC activity decreased significantly as a function of increasing pre-stimulus alpha power during the shaded periods ($p<0.05$, cluster-based randomization test; see **Fig. 4**). The vertical axes ("fitted dSPM") reflect GLME-modeled values in arbitrary statistical units.