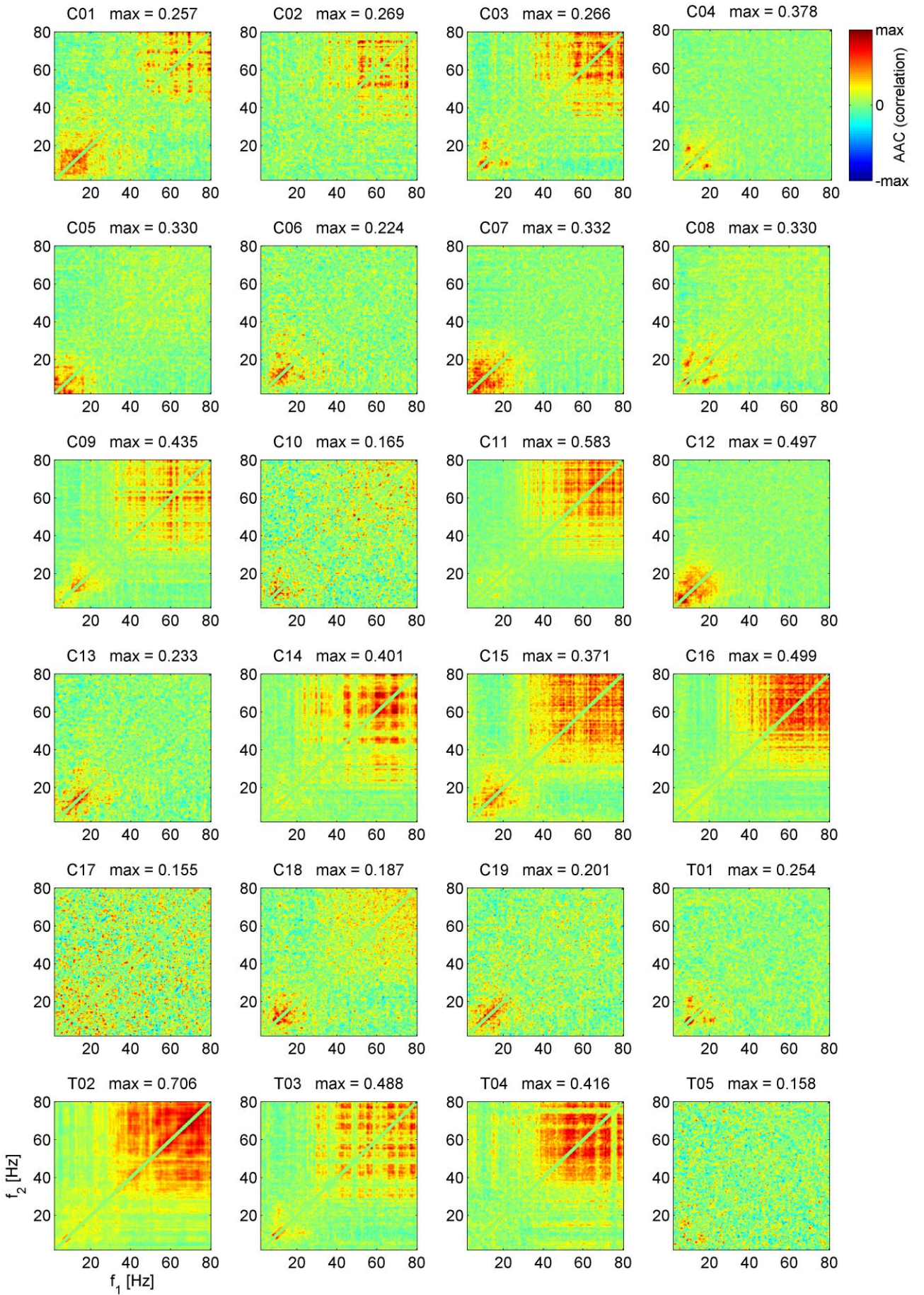
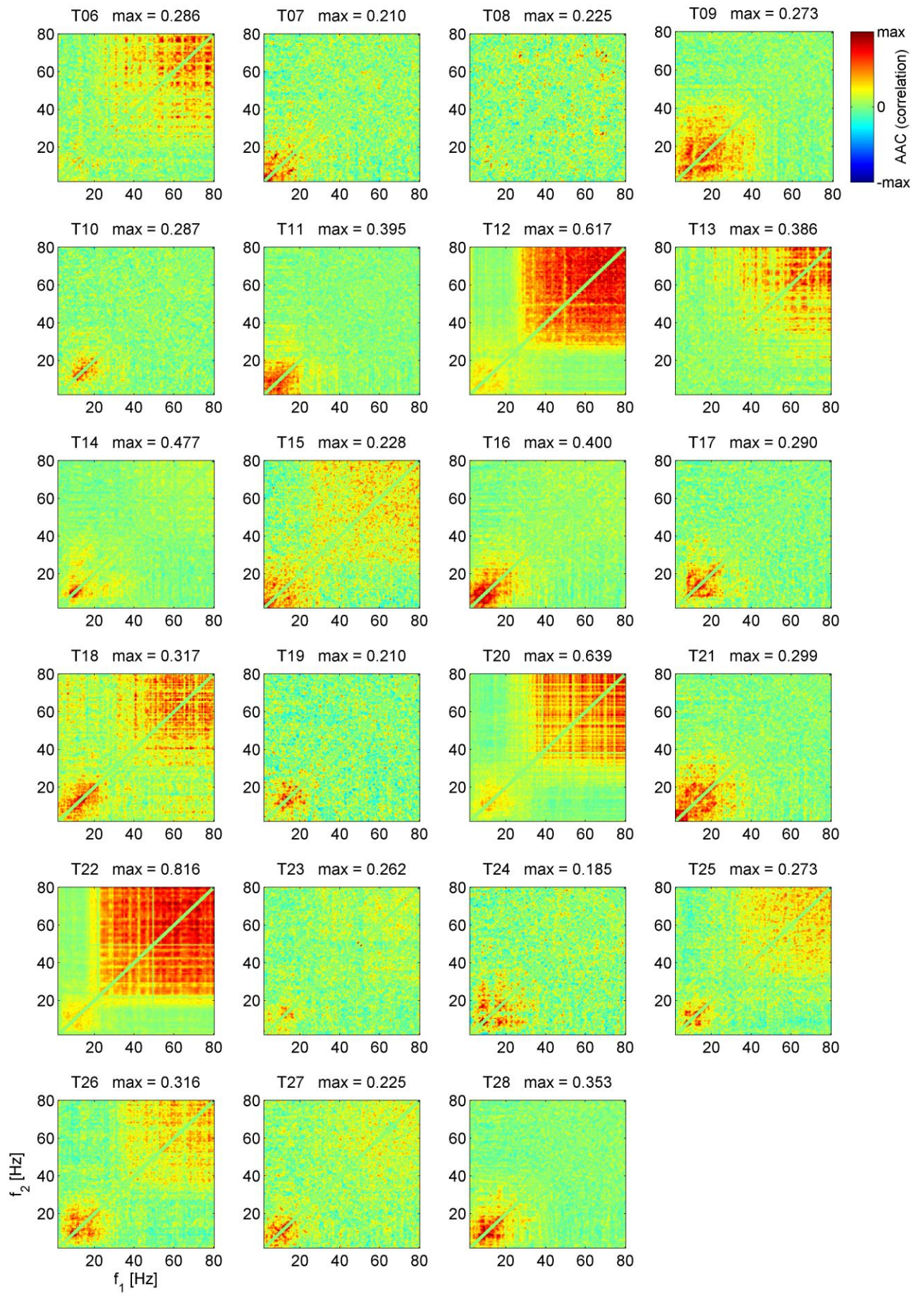


Supplementary figures

Figure S1. The figures below show single-subject comodulograms of amplitude-amplitude cross-frequency coupling (AAC) in the auditory cortices for the frequency regime between 2 and 80 Hz. As indicated by the subject identifiers in the headers, the first 19 diagrams are for controls whereas the subsequent 28 plots depict tinnitus participants. The headers also indicate the maximum AAC (*max*) across the whole comodulogram. In each plot, the colour scale ranges from $-max$ to max so that 0 is always coded by the same colour. Note that for each comodulogram $max > |min|$ with *min* the minimum AAC so that the colour scale covers all assumed values.

More specifically, the maximum values range between 0.156 and 0.816 with a mean of 0.343, whereas minima range from -0.108 to -0.048 ($m=-0.090$). In each case, the majority of couplings is positive (proportions between 55.5% and 96.0%, $m=71.5\%$).





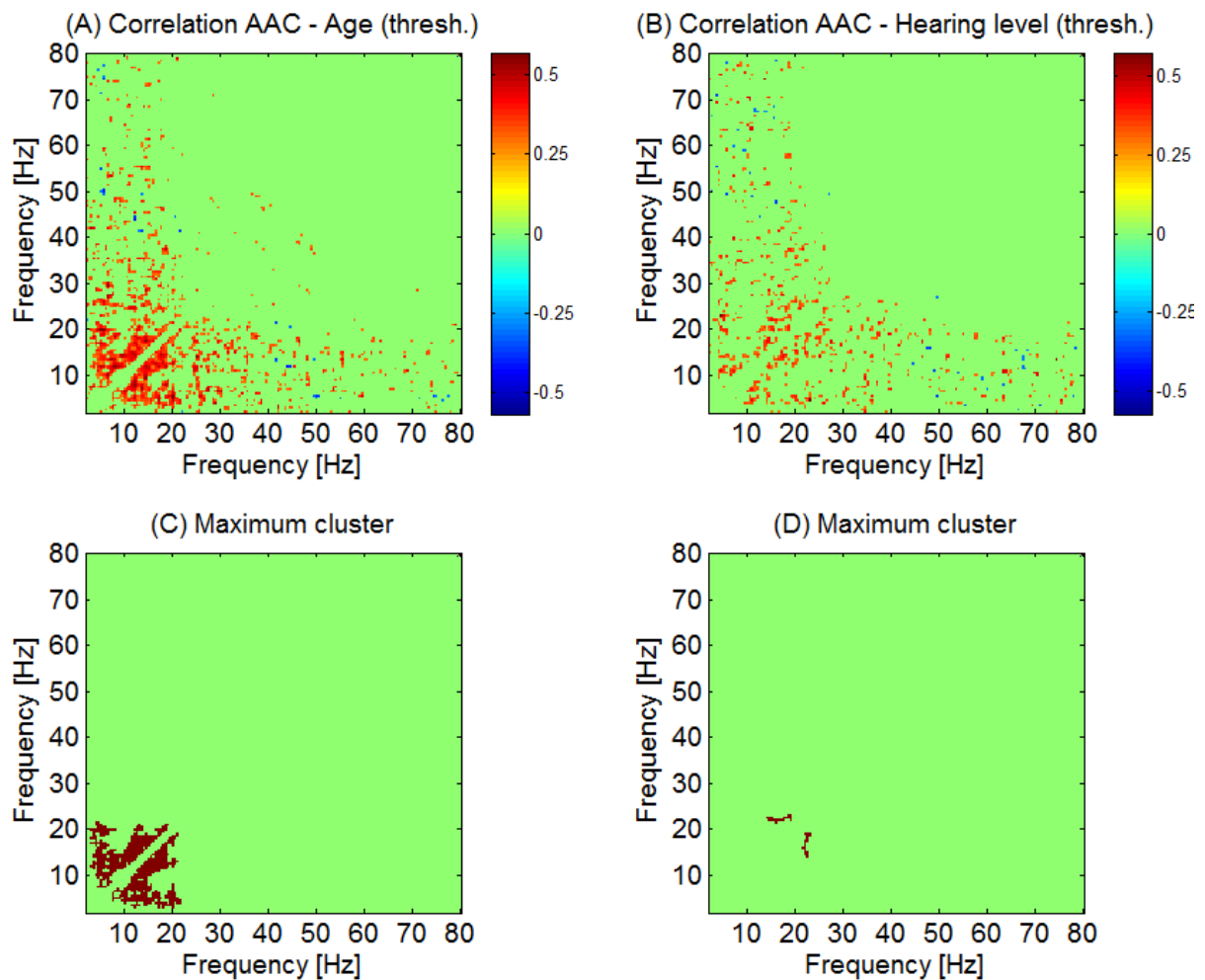


Figure S2. Correlation maps between AAC and (A) age and (B) hearing level thresholded at the cut-off levels for cluster definition ($|\rho| \geq 0.29$; see Methods section). The areas remaining after thresholding correspond to the observed clusters used in the cluster-based permutation tests. (C) and (D) show the respective clusters with the largest test statistics (i.e., correlation sums).

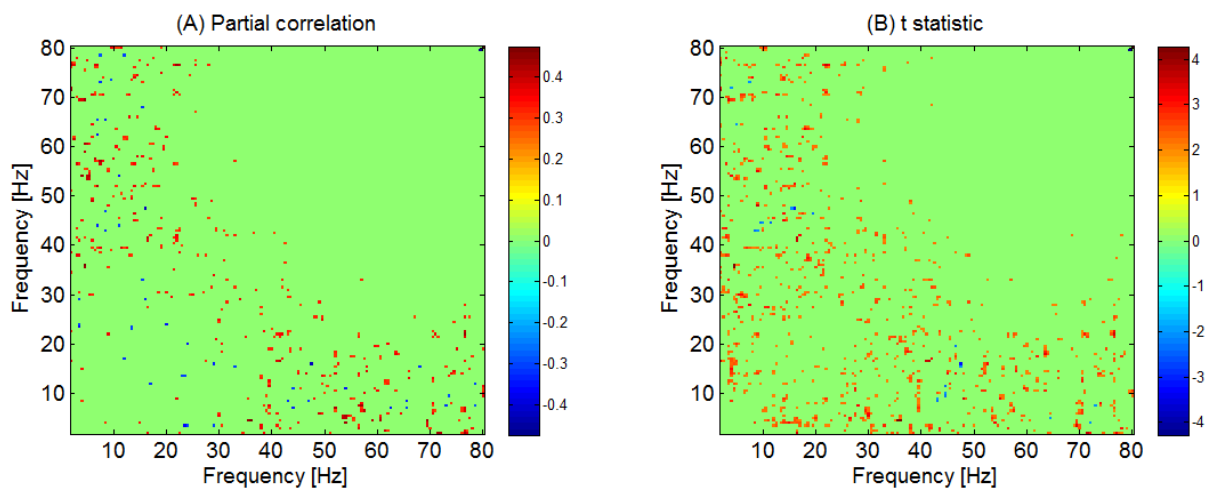


Figure S3. Thresholded maps of (A) partial correlations between AAC and group assignment controlling for age and (B) t statistics for the group comparison between tinnitus and control subjects.

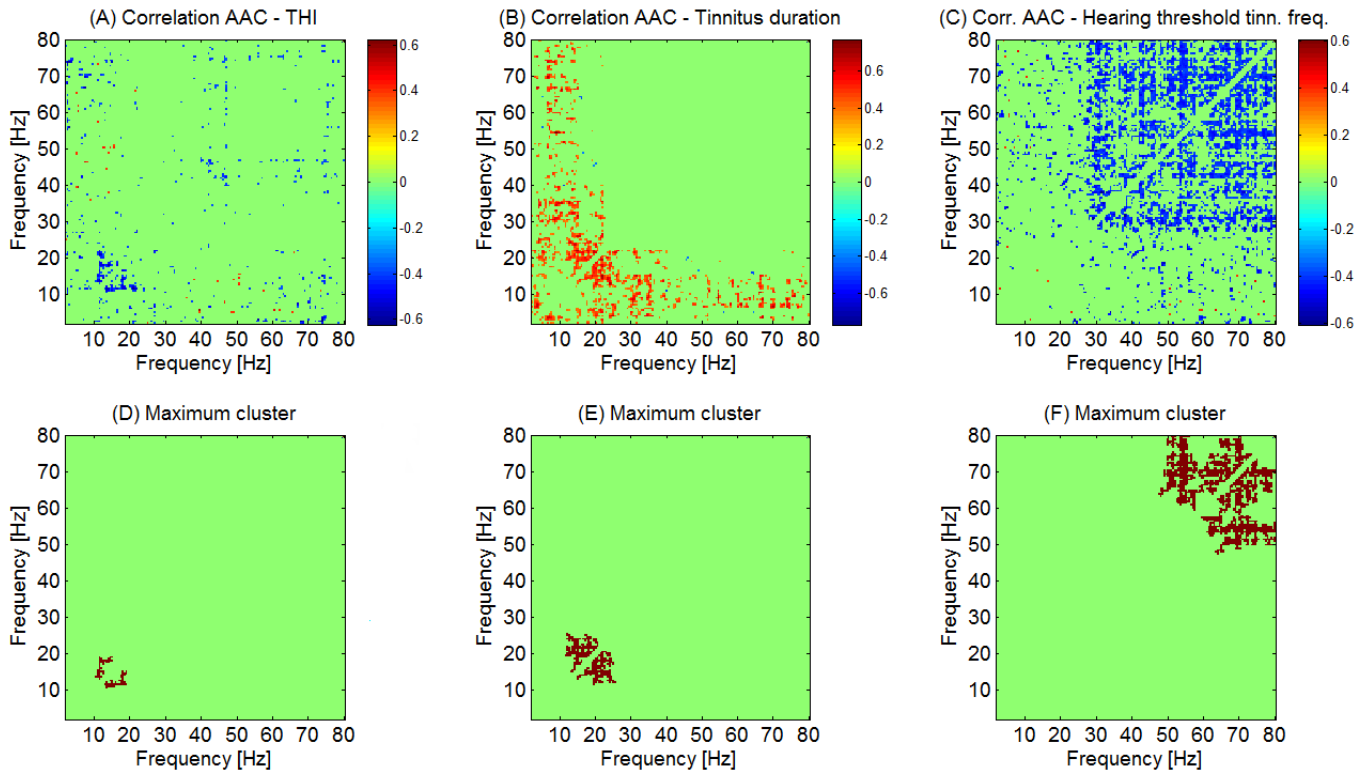


Figure S4. Thresholded correlation maps between AAC and (A) the THI score, (B) tinnitus duration and (C) the hearing threshold at the tinnitus frequency, showing the observed clusters used in the permutation tests. Figures (D)-(F) display the corresponding maximum clusters.

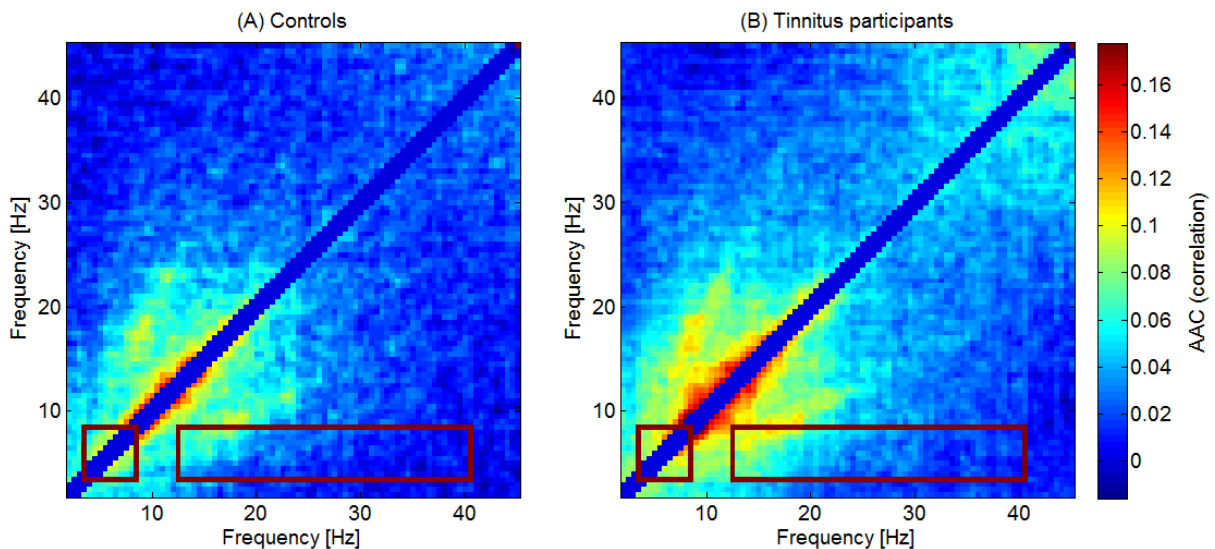


Figure S5. Subject-averaged comodulograms for (A) controls and (B) tinnitus participants. The diagrams highlight specific frequency windows of interest that were described in the TCD model of Llinas et al. [11,12].