

Supplementary Material: **Non-linear Analysis of Scalp EEG by Using Bispectra: The Effect of the Reference Choice**

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1 SUPPLEMENTARY FIGURE

Figure S1 shows the plots of bicoherence as a function of frequencies f_1 and f_2 and for each of the 10 subjects participating to the real data experiment. In particular, this figure represents the results obtained from the datasets re-referenced to $REST_{ind}$. Similar results (not shown here) were obtained for all the other reference schemes. Note that the bicoherence was estimated for each of the N channels and, thus, N estimates were obtained for each frequency pair. However, only the maximum over these N estimates can be appreciated from these plots. A common feature of all subjects is a prominent peak of bicoherence at around $(f_1, f_2) = (10 \text{ Hz}, 10 \text{ Hz})$, which reflects a nonlinear coupling between EEG signal components in the alpha ($f_1 = f_2 = 10 \text{ Hz}$) and beta ($f_3 = f_1 + f_2 = 20 \text{ Hz}$) bands.

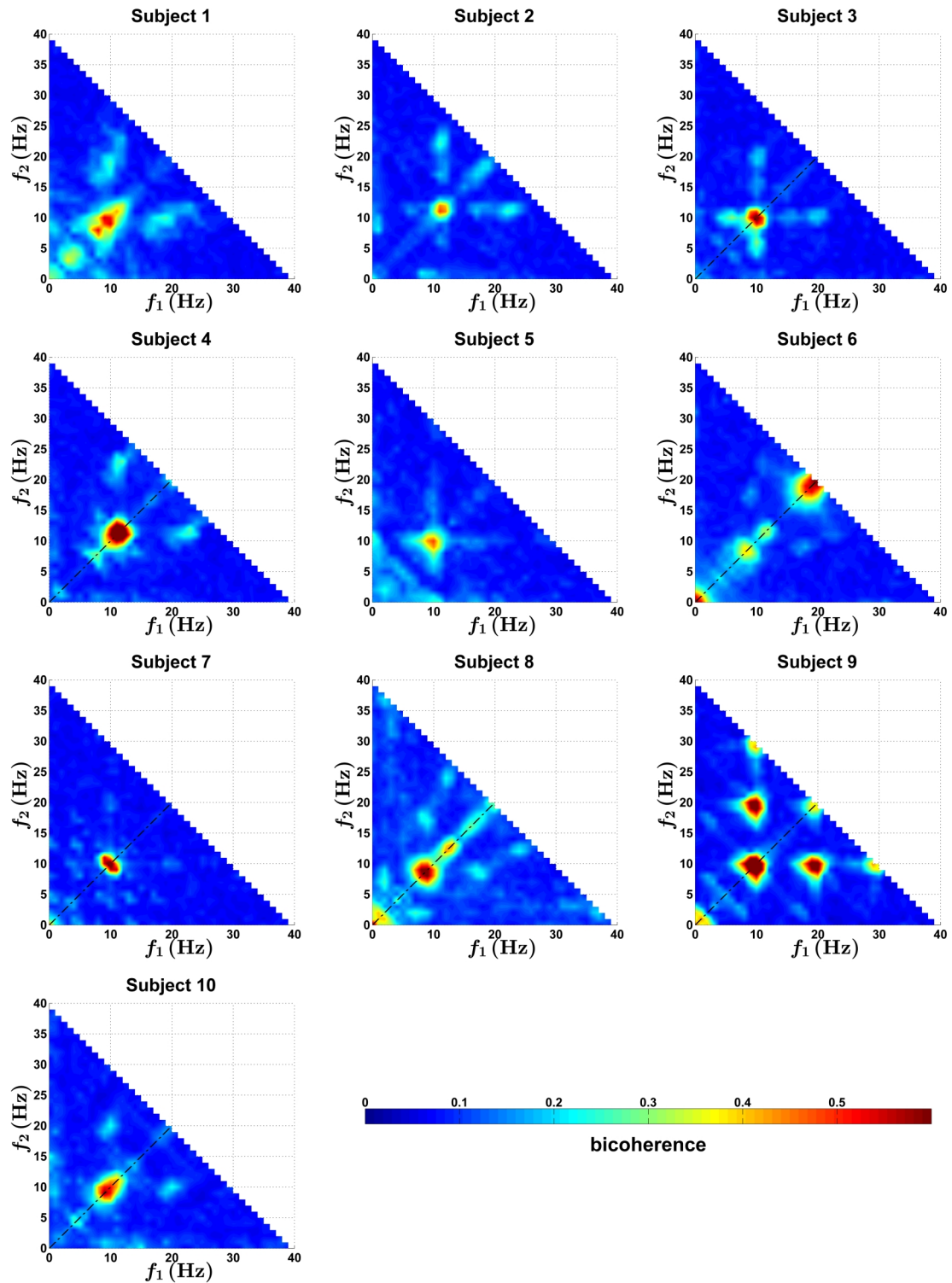


Figure S1. Plots of bicoherence as a function of frequencies f_1 and f_2 and for each of the 10 subjects participating to the real data experiment. These plots were obtained from the dataset re-referenced to $REST_{ind}$.