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Spectral coherence and Granger causality of EEG signals during distant intention

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Goal

Verify possible measurable effects on brain activity of distant intention on participants at 800m away from the intention sender. Participants were exposed to distant intention for 20 minutes and their brain activity was recorded with an electroencephalographic equipment. We analyzed differences in brain activity in both sender and receivers during the intention task when compared to their baselines.

Summary of results

The Reiki practitioner who took the role of intention sender in this study had a reliable spectral signature, particularly in the alpha band, with peak magnitude of 10 Hz during the intention task (Figure 1). This observation was made for both the power spectral density estimate and the spectral coherence analysis, with higher coherence at 9 to 10 Hz alpha. Meanwhile, spectral coherence was not observed between sender and receivers during the 20-minute task.

The Granger causality test showed that for over half the sessions, the sender time series during the task provided statistically relevant information about the future values of the receiver, for a significance level of 1%.

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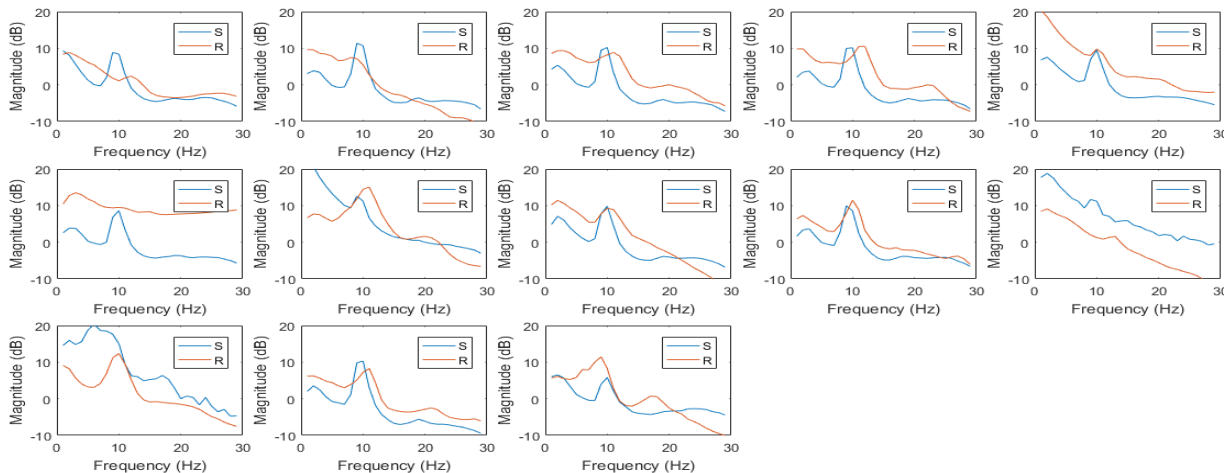


Figure 1: Power spectral density (PSD) of the Cz EEG channel during the intention task for Sender (blue) and Receiver (orange) in the 13 sessions.