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(54) Title: A METHOD TO OBTAIN A NEAR-INFRARED SPECTROSCOPY CEREBRAL SIGNAL

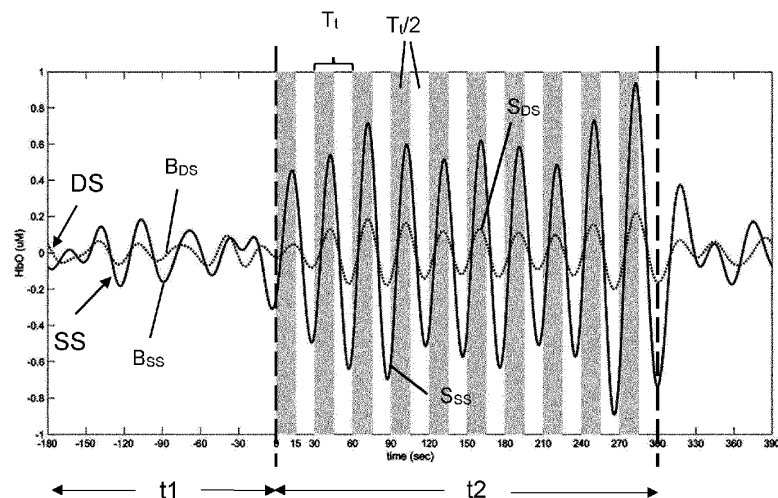


Fig. 4

(57) **Abstract:** A method to obtain a near-infrared spectroscopy (fNIRS) cerebral signal (S_{CS}) in a subject (1), comprising the steps of: placing a near-infrared emitter (2) and respective proximal and distal near-infrared detectors (3) on the skin of the head of the subject (1); during a baseline recording stage (t_1) with the subject in resting-state, record near-infrared signals, the recorded signals comprising a baseline deep-signal (B_{DS}) and a baseline shallow-signal (B_{SS}); calculate a scaling factor (K) between the amplitude of the baseline deep-signal and the baseline shallow-signal at a given task-frequency (f_t); with the subject undergoing a cyclic cerebral stimulation at the task-frequency during a stimulation recording stage (t_2), record near-infrared signals, the recorded signals comprising a shallow-signal (S_{SS}) and a deep-signal (S_{DS}); and applying the scaling factor to the shallow-signal, calculating the cerebral signal at the task-frequency as the difference between the deep-signal and the scaled shallow-signal, at the task-frequency (f_t).

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