

## Data Set Description

This data set consists of EEG data from 9 subjects. Respectively S1, S2, S3 and S4.

The experiment's content is to imagine using the left and right hands to press the prompt lights. The experiment interface has two reminders on the left and right. When the reminder on one side is on, imagine using that side hand to press the lit reminder. The experiment interface is shown in Fig 1. A complete experiment is a block, and each experimenter completes six blocks in three days. Each block contains continuously collected EEG data and contains 20 left and right hands random motion imagination tasks. Each imagination is a trial, and each trial has a duration of 7.5 seconds. In a single block, there are left and right hands imagination task 10 times each. At the beginning of the experiment, the experimenter will enter the target reminder stage. At this stage, one of the reminders will flash on the screen to remind the experimenter that this trial's motor imagination task is left-hand or right-hand, and the duration is 1.5 seconds. Then it is the motor imagination stage. During the motor imagination process, the indicator light will remain on, and the experimenter will start to imagine the left or right-hand motor. After the motor imagination phase, the experimenter will have a rest period of 2 seconds. A Trigger signal will be recorded at the beginning and end of a single trial of motor imagery, which serves as an indicator for the sorting of experimental data. The sequence diagram of

each trial experiment is shown in Fig 2.

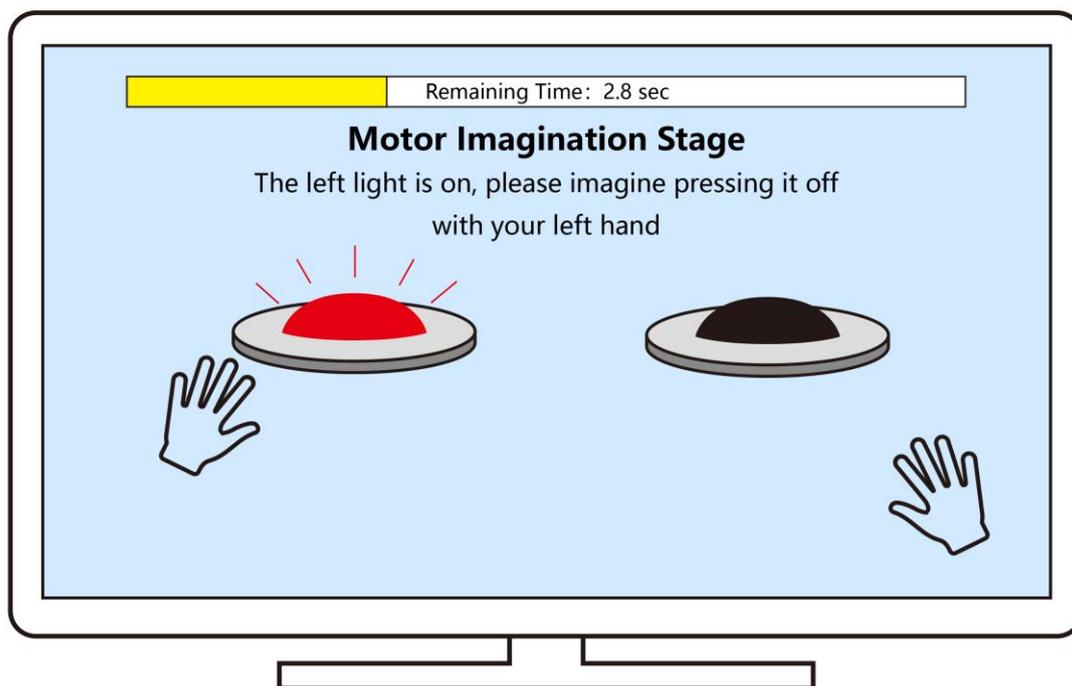


Fig 1. The experiment interface

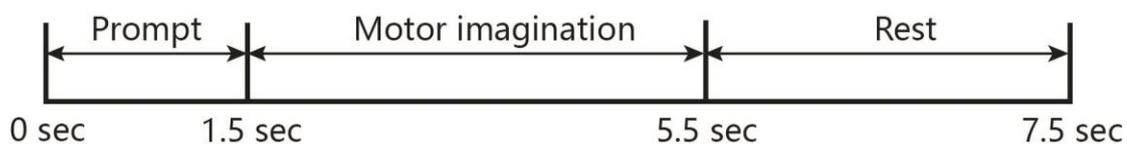


Fig 2. Timing scheme of the paradigm.

## Data recording

The experiment uses NeuSen W Wireless EEG Acquisition System of Neuracle Company.

All data sets are stored in the “.mat” file and can be loaded with Matlab. The data sampling rate is 250Hz.

Each “.mat” file represents a trial, containing 20 blocks. The 20 blocks contain 10 left-hand tasks and 10 right-hand tasks. Each participant

completed 6 trials.

The label of the data is on line 65 of each “.mat” file.

The label “252” represents the beginning of the block, “253” represents the end of the block, “1” represents the beginning of left-hand motor imagination, “2” represents the beginning of right-hand motor imagination, and “251” represents the end of trial.