

The dataset is about 928 MB from 102 subjects. EEG and Impedance data are saved as MATLAB MAT files. The sample rate is 1000Hz and all data are downsampled to 250Hz from raw data without any other processing. Each EEG file is named as “Subject index ” (i.e., S001.mat, S002.mat, ..., S102.mat). For each file, a 5-D matrix named “data” with dimensions of [8, 710, 2, 10, 12]. The five dimensions indicate “Channel index”, “Time points”, “Electrode index”, “Block index” and “Target index” respectively. In terms of single trials, the data matrix consists of 240 trials (12 targets \times 10 blocks \times 2 electrodes) and each trial consists of 8 channels of 710-point data. The data length of 2.84 seconds (i.e. $2.84 \times 250 = 710$ time points) include 0.5 s before stimulus onset, 2 s for stimulation, 0.14 s visual latency, and 0.2 s after stimulus offset. To keep all original information, the data epochs were directly extracted from the raw continuous data without any processing.

The electrode impedances recorded before each block were provided in the data matrix of “Impedance.mat “ with dimensions of [8, 10, 2, 102]. The numbers in the four dimensions represent the number of channels, blocks, headband types (1: wet, 2: dry) and subjects respectively. The impedance information can be used to study the relationship between impedance and BCI performance.

The “subjects_information.pdf” file lists the information of all 102 subjects together with a questionnaire on the comfort level and preference of the two headbands after the experiment. For each participant, there are 10 columns of parameters (factors). The first 4 columns are the subjects’ personal information including “subject index”, “gender”, “age”, and “dominant hand”. The 6 columns (5th-10th) are listed as results in questionnaires, which are “Comfort of dry electrode headband”, “Wearing time of dry electrode when pain occurs”, “Comfort of wet electrode headband”, “Wearing time of wet electrode when pain occurs”, “Only consider comfort, headband preference” and “comprehensively consider comfort and convenience (need assistance from others, conductive paste, shampoo, etc.), headband preference”. The last column shows the order of wearing the two headbands.

The “stimulation_information.pdf” file lists the stimulation parameters of the 12 characters, including frequency and phase information of each character.

数据集是102个科目约为928 MB。eeg和阻抗数据被保存为Matlab垫文件。采样率为1000Hz，所有数据从原始数据下按到250Hz，无需任何其他处理。每个EEG文件都被命名为“主题索引”（即，S001.mat, S002.mat, ..., S102.mat）。对于每个文件，一个名为“data”的5-d矩阵

尺寸[8,710,2,12,12]。五个尺寸表示“通道索引”，“时间点”，“电极指数”，“块索引”和“目标索引”。在单一试验方面，数据矩阵由240试验（12个目标 \times 10块 \times 2电极组成），每个试验由8个通道组成710点数据。数据长度为2.84秒（即 $2.84 \times 250 = 710$ 个时间点）包括在刺激开始之前的0.5秒，2秒用于刺激，0.14秒的视觉延迟和刺激后的0.2秒。为了保留所有原始信息，数据时期直接从原始连续数据中提取，无需任何处理。

在每个块之前记录的电极阻抗设置在“阻抗.mat”的数据矩阵中，其尺寸为[8,10,2,102]。四维中的数字分别代表了通道，块，头带类型（1：湿，2：干）和受试者的数量。阻抗信息可用于研究阻抗与BCI性能之间的关系。

“主题_information.pdf”文件将所有102个科目的信息列出了在实验后的舒适度和两个头带的舒适度和偏好的调查问卷。对于每个参与者，有10列参数（因子）。前4列是受试者的个人信息，包括“主题索引”，“性别”，“年龄”和“优势手”。作为问卷调查结果的6列（第5栏），这是“干电极头带的舒适性”，“干燥电极的磨损时间发生时”，“湿电极头带的舒适性”，“湿电极的磨损时间”当疼痛发生“时，”只考虑舒适，头带偏好“和”全面考虑舒适和便利（需要援助他人，导电膏，洗发水等），头带偏好“。最后一列显示佩戴两个头带的顺序。

“刺激_information.pdf”文件列出了12个字符的刺激参数，包括每个字符的频率和相位信息。