(Excerpt from the BETA preprint)

EEG data after preprocessing are store as a 4-way tensor, with a dimension of channel x time point x block x condition. Each trial comprises 0.5-s data before the event onset and 0.5-s data after the time window of 2 s or 3 s. For S1-S15, the time window is 2 s and the trial length is 3 s, whereas for S16-S70 the time window is 3 s and the trial length is 4 s. Additional details about the channel and condition information can be found in the following supplementary information.

Eight supplementary information is comprised of personal information, channel information, frequency and initial phase associated to each condition, SNR and sampling rate. The personal information contains age and gender of the subject. For the channel information, a location matrix (64 x 4) is provided, with the first column indicating channel index, the second column and third column indicating the degree and radius in polar coordinates, and the last column indicating channel name. The SNR information contains the mean narrow-band SNR and wide-band SNR matrix for each subject, calculated in (3) and (4), respectively. The initial phase is in radius.

Liu B, Huang X, Wang Y, Chen X, Gao X. BETA: A large benchmark database toward SSVEP-BCI application. Frontiers in neuroscience. 2020 Jun 23;14:627.

Update:
Date: on October 20th, 2021
Note: An issue reported by swolf has been solved. In this version, we updated the initial phase information in the data.suppl_info.phases, which was validated and then corrected to the the ground-truth value in the paper. Thank you swolf for your constructive feedback!

Corrigendum:
Date: on October 20th, 2021
In Eq. (4), "P(k·f)" should be correct to "P(k·f_n)", where f_n is the stimulus frequency, and P(f) denotes the
power spectrum (power spectral density) at frequency f.

If there is any further issue, please feel free to contact lbc14@tsinghua.org.cn. We are grateful for your support and constructive advice.

Associated data:
Date: on October 20th, 2021

We further curated the dataset without any filtering procedure by software. This dataset corresponds to the original BETA dataset and it is under the directory "BETA Database (wof)".

BibTex

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@article{liu2020beta,
  title={BETA: A large benchmark database toward SSVEP-BCI application},
  author={Liu, Bingchuan and Huang, Xiaoshan and Wang, Yijun and Chen, Xiaogang and Gao, Xiaorong},
  journal={Frontiers in neuroscience},
  volume={14},
  pages={627},
  year={2020},
  publisher={Frontiers}
}
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