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Introduction Recent studies have shown that it is important to understand the brain mechanism specifically by focusing on the common and unique functional connectivity in each disorder including depression.

Objectives To specify the biomarker of major depressive disorder (MDD), we applied the sparse machine learning algorithm to classify several types of affective disorders using the resting state fMRI data collected in multiple sites, and this study shows the results of depression as a part of those results.

Aims The aim of this study is to understand some specific pattern of functional connectivity in MDD, which would support diagnosis of depression and development of focused and personalized treatments in the future.

Methods The neuroimaging data from patients with major depressive disorder (MDD, $n = 100$) and healthy control adults (HC: $n = 100$) from multiple sites were used for the training dataset. A completely separate dataset ($n = 16$) was kept aside for testing. After all preprocessing of fMRI data, based on one hundred and forty anatomical region of interests (ROIs), 9730 functional connectivities during resting states were prepared as the input of the sparse machine-learning algorithm.

Results As results, 20 functional connectivities were selected with the classification performance of Accuracy: 83.0% (Sensitivity: 81.0%, Specificity: 85.0%). The test data, which was completely separate from the training data, showed the performance accuracy of 83.3%.

Conclusions The selected functional connectivities based on the sparse machine learning algorithm included the brain regions which have been associated with depression.

Disclosure of interest The authors have not supplied their declaration of competing interest.

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Keyppy – An open source library for EEG microstate analysis

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The brain's electric field configuration reflects its momentary, global functional state. The fluctuations of these states can be analyzed at millisecond resolution by the EEG microstate analysis. This analysis reportedly allowed the detection of brain state duration, occurrence, and sequence aberrations in psychiatric disorders such as schizophrenia, dementia, and depression. Several existing software solutions implement the microstate analysis, but they all require extensive user-interaction. This represents a major obstacle to time-efficient automated analyses and parameter exploration of large EEG datasets. Scriptable programming languages such as Python provide a means to efficiently automate such analysis workflows.

For this reason, I developed the KEY EEG Python Library keyppy. This library implements all steps necessary to compute the microstate analysis based on artefact free segments of EEG. It includes functions to carry out the necessary preprocessing (data loading, filtering, average referencing), modified k-means clustering based microstate identification, principal component based mean com-

putation (across recording runs, conditions, participants, and or participant groups), and to retrieve the microstate class based statistics necessary to compare microstate parameters between groups and/or conditions. Keyppy is an open source library and freely available from <https://www.github.com/keyinst/keyppy>.

Keyppy provides a platform for automated microstate analysis of large-scale EEG datasets from psychiatric patient populations and their comparison to healthy controls. It is easily applicable and allows efficient identification of deviant brain states in clinical conditions.

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Agensis of the corpus callosum in a patient with bipolar disorder

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Background The corpus callosum (CC) is the largest white matter structure in the brain, which plays a crucial role in interhemispheric communication. Agensis of the CC is a rare development anomaly, with unknown cause. It could be asymptomatic or associated with mental retardation and neurologic symptoms. Some case reports, post-mortem studies and image studies have linked thickness reduction and agensis of CC with psychotic symptoms, mainly in schizophrenia patients. Lately, anatomical abnormalities in the CC have been reported in patients with Bipolar Disorder (BD).

Case report A 52-year-old woman was brought to the emergency room by the authorities after being physically aggressive to her 13-year-old daughter and inappropriate behavior in public. At the emergency department her mood was elevated with emotional lability, dispersible attention, slight increase of motor activity, pressured and difficult to interrupt speech, grandious and self-referent delusional ideas.

Her past history revealed hippomaniac episodes characterized by periods of excessive shopping and hyperphagia. In 2008, she had a major depressive episode.

Head CT-SCAN revealed agensis of CC. She received the diagnosis of Manic Episode with mixed features and was treated with valproic acid, flurazepam and olanzapine.

Conclusion This case reinforces the fact that changes in CC, probably due to deficiency in myelination, could have a crucial importance in the pathophysiology of Bipolar Disorder.

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Obsessive-compulsive disorder

EV831

The nose – A case report of body dysmorphic disorder and a literature review

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