An online atlas of the human cerebellum

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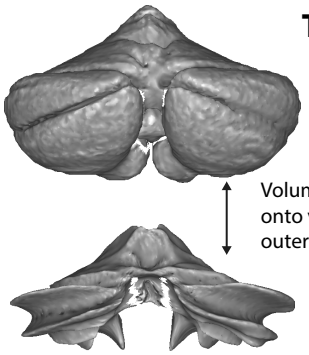
1981

Multi-domain task battery contrast

- Activation maps for 47 cognitive task conditions across domains
- Separate maps accoung for left and right hand + eye movements

King, M., Hernandez-Castillo, C.R., Poldrack, R. A., Ivry, R., Diedrichsen, J. (2019). Functional Boundaries in the Human Cerebellum revealed by a Multi-Domain Task Battery. Nature Neuroscience.

The Flat map

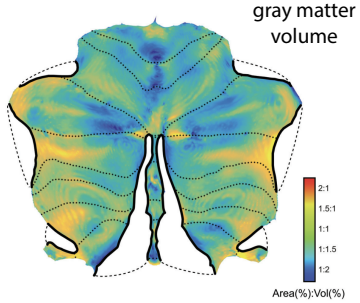


Diedrichsen, J., Zotow, E. (2015). Surface-Based Display of Volume-Averaged Cerebellar Imaging Data. PLoS One.

Volume data is mapped onto vertices between outer and inner cerebellar surface

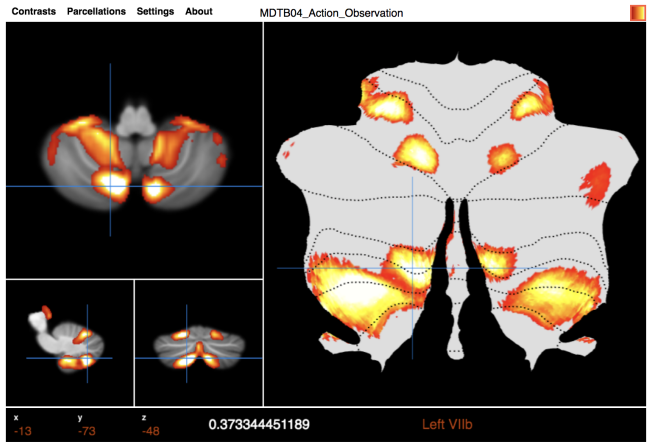
Viewer allows exploration of relationship between volume and surface displays

Flat map makes surface area proportional to gray matter volume



The online viewer

http://www.diedrichsenlab.org/imaging/AtlasViewer



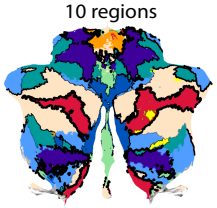
Video:

http://www.diedrichsenlab.org/media/atlasviewer.htm

Task-free parcellations

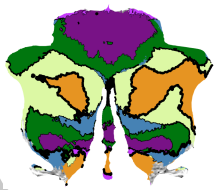
- Based on resting-state functional connectivity with cortical networks
- Overlap with task-based MDTB pacellation
- Don't perform as well as MDTB in predicting functional boundaries (King et al., 2019)

Ji et al. (2019)
10 regions



Buckner et al. (2011)

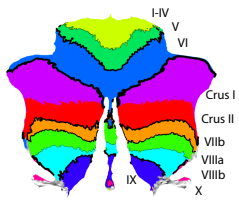
7 regions



17 regions

Lobular parcellations

- Based on probabilistic atlas of lobules (Diedrichsen et al, 2009).
- Widely used, but do not consistute functionally distinct regions



Task-based functional parcellation

- Based on MTDB data, parcellations of 7, 10, and 17 regions are available.
- Each parcel is described by a set of features that evokes activity in the region.