

Research Project Brain Network Morphism

## Third-party funded project

Project title Brain Network Morphism Principal Investigator(s) Nijhuis, Emil ; Organisation / Research unit Bereich Querschnittsfächer (Klinik) / Radiologie USB Bereich Querschnittsfächer (Klinik) / Neuroradiologie (Psychogios) Department Project Website http://p3.snf.ch/project-190514 Project start 01.12.2019 Probable end 30.09.2020 Status Completed Human brains can be as different as their faces. While we are able

Human brains can be as different as their faces. While we are able to recognize individuals by looking at their faces and see their similarity to other faces, we lag the same ability for brains. This research proposal attempts to improve our ability to compare different brains and quantify their similarity by looking at the connectivity of structural brain networks. To this end, we have a high quality MRI dataset of 80 individuals available, for which various structural network representations (connectomes) already have been constructed. The goal is to develop methods to compare template-free created structural brain networks. The main technique, which will drive the proposed research, will be the mapping and matching of networks in embedded spaces where distances and similarities can be estimated. The results of the research proposal will contribute towards a better understanding of individual brain differences in healthy and diseased brains.

## Financed by

Swiss National Science Foundation (SNSF)

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