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Presentation of the project 'Narps Open Pipeline'

Jeremy Lefort-Besnard, Camille Maumet, Boris Clenet, Elodie Germani

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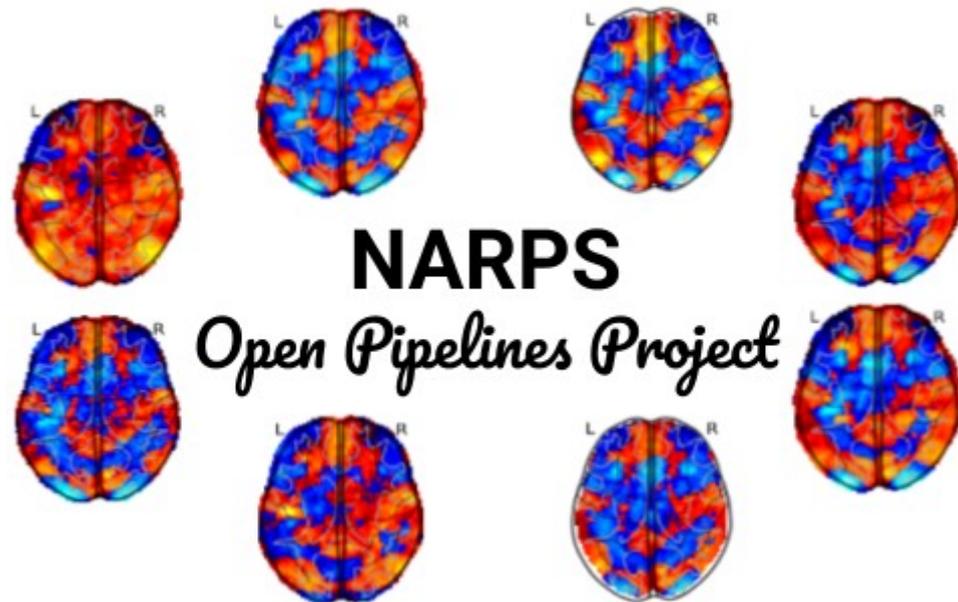
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Camille
Maumet



Boris
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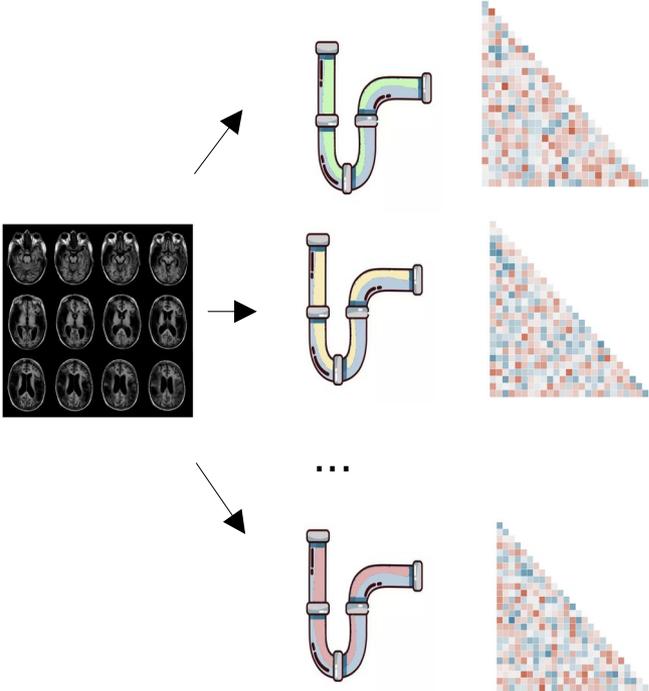


Elodie
Germani

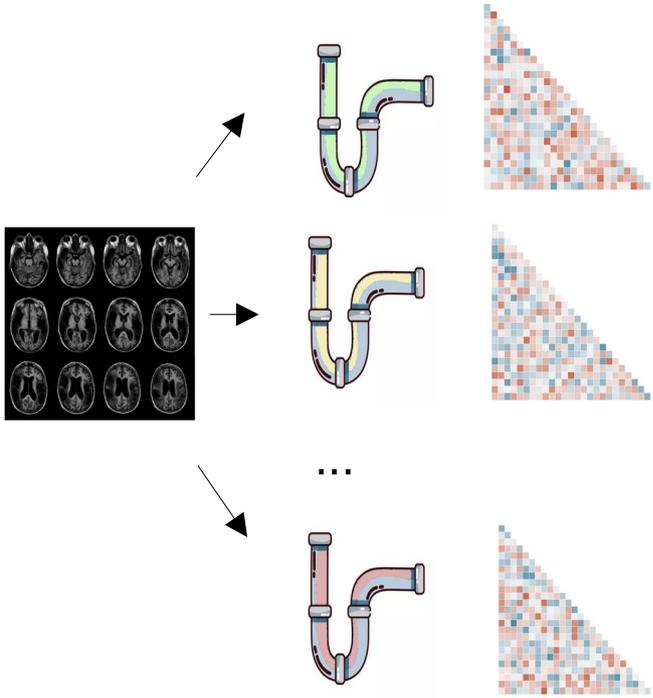


Jeremy
Lefort-Besnard

Analytical variability has often been overlooked assuming it was negligible compared to other sources of variability



Analytical variability has often been overlooked assuming it was negligible compared to other sources of variability



In 2020 a landmark paper in Nature challenged this status-quo:

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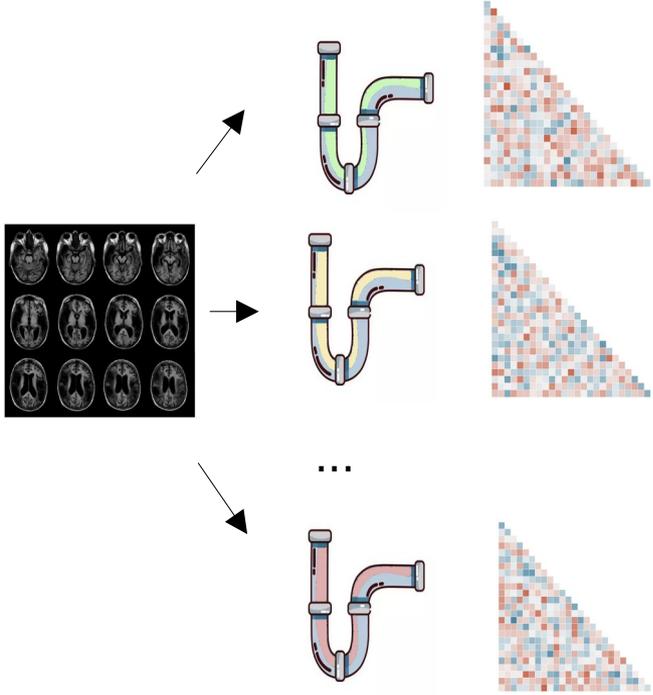
Variability in the analysis of a single neuroimaging dataset by many teams

[Rotem Botvinik-Nezer](#), [Felix Holzmeister](#), [Colin F. Camerer](#), [Anna Dreber](#), [Juergen Huber](#), [Magnus Johannesson](#), [Michael Kirchler](#), [Roni Iwanir](#), [Jeanette A. Mumford](#), [R. Alison Adcock](#), [Paolo Avesani](#), [Blazej M. Baczowski](#), [Aahana Bajracharya](#), [Leah Bakst](#), [Sheryl Ball](#), [Marco Barilari](#), [Nadège Bault](#), [Derek Beaton](#), [Julia Beitner](#), [Roland G. Benoit](#), [Ruud M. W. J. Berkers](#), [Jamil P. Bhanji](#), [Bharat B. Biswal](#), [Sebastian Bobadilla-Suarez](#), ... [Tom Schonberg](#) ✉ [+ Show authors](#)

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70 expert teams (200 scientists) – Same yes/no research questions – Same dataset

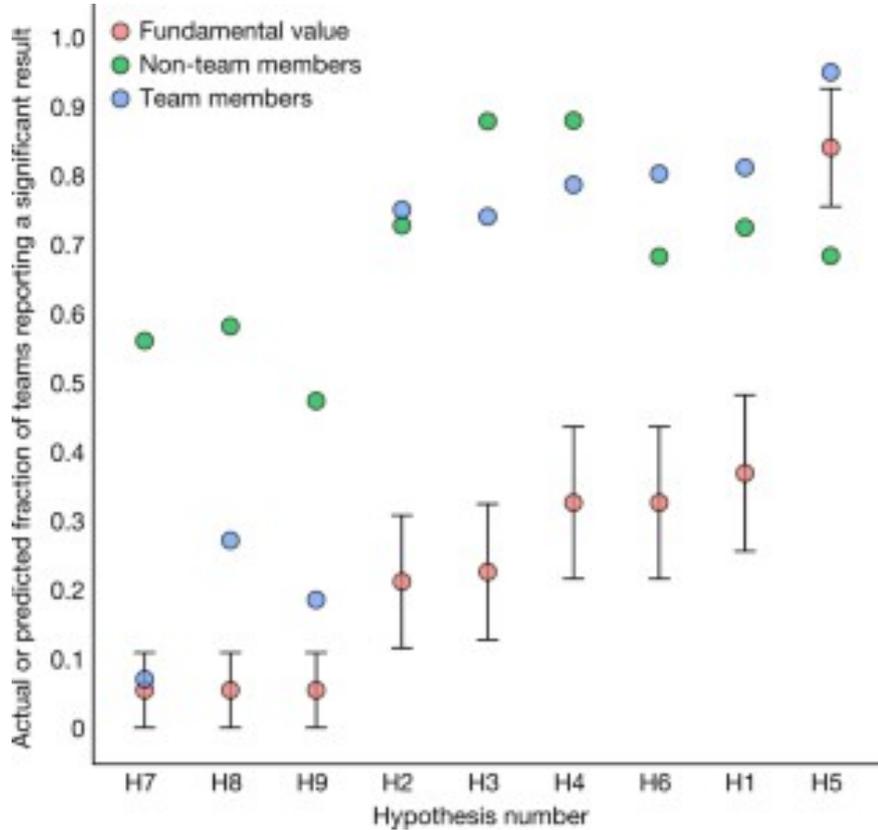
Each team built a different pipeline

Each team built a different pipeline

Differences in pipelines led to contradictory findings

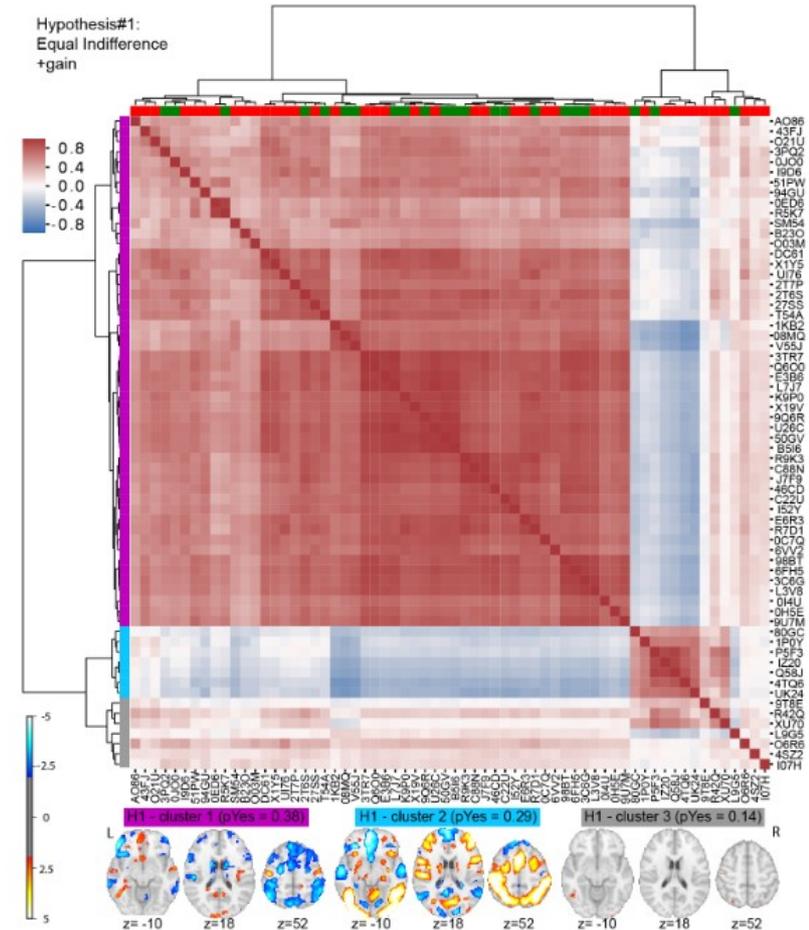
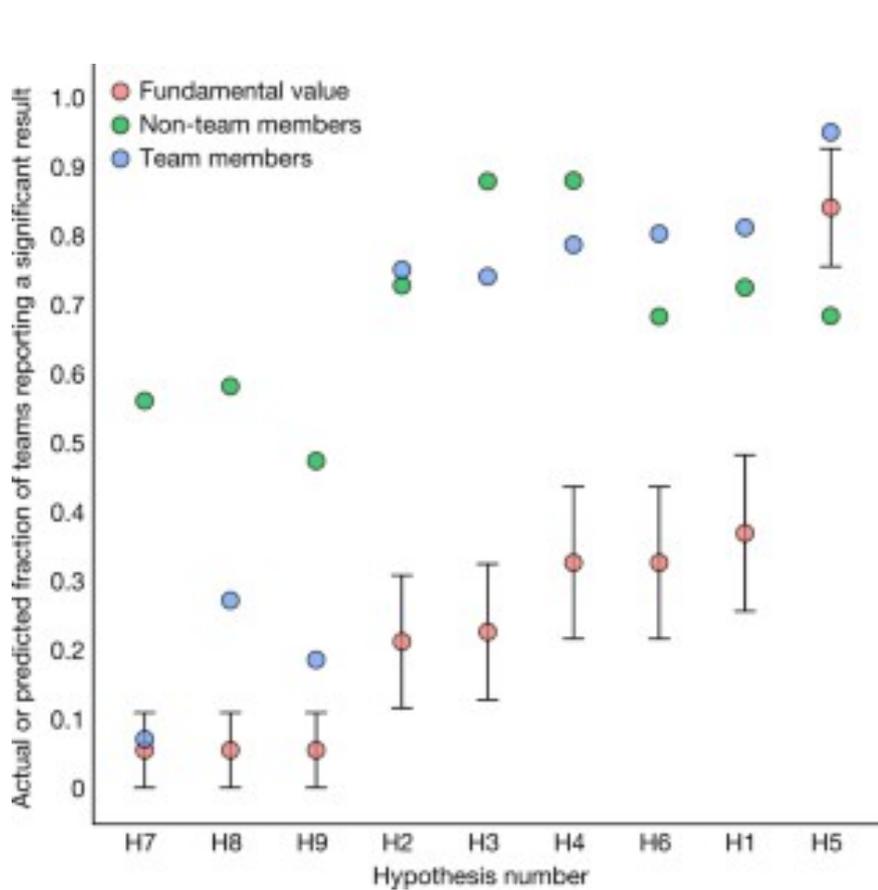
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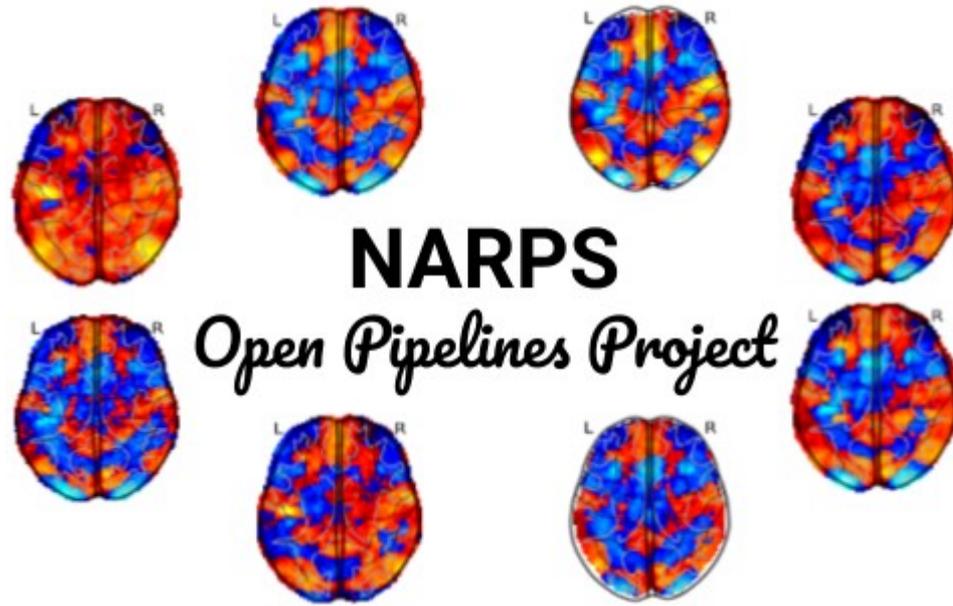
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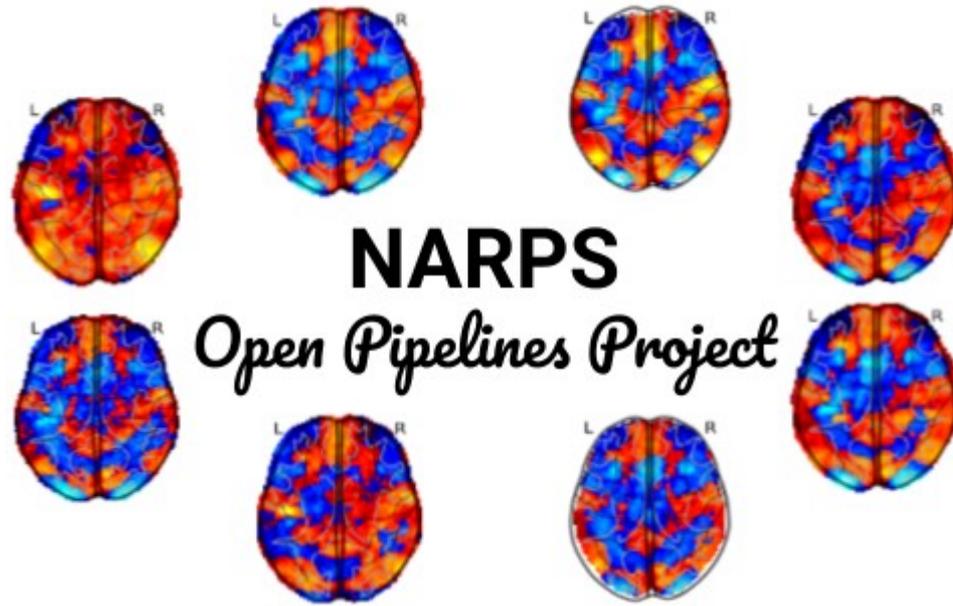
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Differences in pipelines led to contradictory findings





Create a codebase reproducing the 70 pipelines of the NARPS study and share this as an open resource for the community



Create a codebase reproducing the 70 pipelines of the NARPS study and share this as an open resource for the community



[Github.com/Inria-Empenn/narps_open_pipelines](https://github.com/Inria-Empenn/narps_open_pipelines)



Github.com/Inria-Empenn/narps_open_pipelines

Use a NARPS pipeline for your project:

```
narps_open_pipelines / narps_open / pipelines / team_2T6S.py 📄
bclenet 2T6S pipeline reproduction (#75) 🗨️ ✅
Code Blame Executable File · 664 lines (562 loc) · 27.8 KB
1  #!/usr/bin/python
2  # coding: utf-8
3
4  """ Write the work of NARPS team 2T6S using Nipype """
5
6  from os.path import join
7  from itertools import product
8
9  from nipype import Workflow, Node, MapNode
10 from nipype.interfaces.utility import IdentityInterface, Function
11 from nipype.interfaces.io import SelectFiles, DataSink
12 from nipype.interfaces.spm import (
13     Smooth,
14     Level1Design, OneSampleTTestDesign, TwoSampleTTestDesign,
15     EstimateModel, EstimateContrast, Threshold
16 )
17 from nipype.algorithms.modelgen import SpecifySPMModel
18 from nipype.algorithms.misc import Gunzip
19
20 from narps_open.pipelines import Pipeline
21
```



Github.com/Inria-Empenn/narps_open_pipelines

Use a NARPS pipeline for your project:

```
narps_open_pipelines / narps_open / pipelines / team_2T6S.py
```

bclenet 2T6S pipeline reproduction (#75) ✓

Code Blame Executable File · 664 lines (562 loc) · 27.8 KB

```
1  #!/usr/bin/python
2  # coding: utf-8
3
4  """ Write the work of NARPS team 2T6S using Nipype """
5
6  from os.path import join
7  from itertools import product
8
9  from nipype import Workflow, Node, MapNode
10 from nipype.interfaces.utility import IdentityInterface, Function
11 from nipype.interfaces.io import SelectFiles, DataSink
12 from nipype.interfaces.spm import (
13     Smooth,
14     Level1Design, OneSampleTTestDesign, TwoSampleTTestDesign,
15     EstimateModel, EstimateContrast, Threshold
16 )
17 from nipype.algorithms.modelgen import SpecifySPMModel
18 from nipype.algorithms.misc import Gunzip
19
20 from narps_open.pipelines import Pipeline
```

Contribute to NARPS Open Pipelines:

The NARPS Open Pipelines project

unit tests passing code quality passing contributors 7 commit activity 2/month

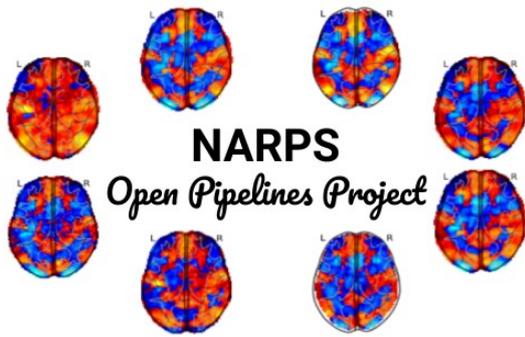
Table of contents

- Project presentation
- Getting Started
 - Contents overview
 - Installation
 - Contributing
- References
- Funding

● not started yet
● in progress
● completed

The *softwares used* column gives a simplified general *software* column.

| team_id | status | softwares used |
|---------|--------|----------------|
| Q6O0 | ● | SPM |
| 6VV2 | ● | AFNI |
| 08MQ | ● | FSL |
| 1KB2 | ● | FSL |
| 43FJ | ● | FSL |
| 4SZ2 | ● | FSL |
| 4TQ6 | ● | FSL |
| B5I6 | ● | FSL |
| O6R6 | ● | FSL |
| T54A | ● | FSL |
| X19V | ● | FSL |



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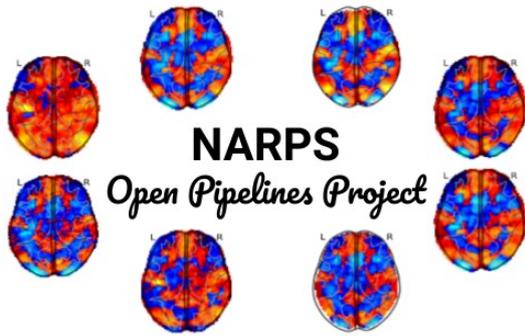


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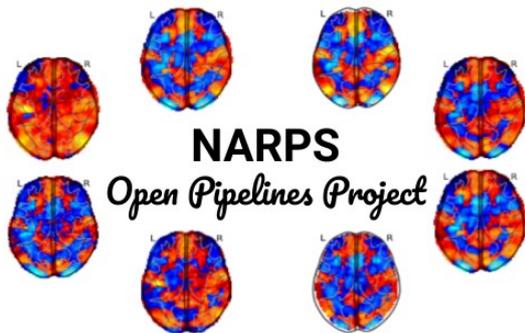


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This project receives contributions by Rémi Gau and during events such as OHBM Brainhack 2022 and 2023, e-ReproNim FENS NENS Cluster Brainhack 2023, ORIGAMI lab hackathon 2023 by :

Arshitha Basavaraj, Trang Cao, Anna Menacher, Liz Bushby, Michael Dayan, Aimee Westbrook, Yaroslav Halchenko, Paul Taylor



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Come meet us and/or contribute during our next brainhack sessions:

- Monthly Narps Open hours
- Marseille brainhack 2023
- OHBM brainhack 2024