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Multiverse Analysis: Practical Session (fMRI)

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Multiverse Analysis - fMRI

fMRI multiverse analysis example

Goal

Classify autistic individuals from healthy controls using functional connectivity (FC) from resting-state fMRI data with a logistic regression model.

Data

- **Sample:** 100 participants (50 autistic, 50 healthy controls)
- **Task:** Resting-state fMRI recording

The Multiverse

Regressor	CCS	C-PAC	DPARSF	NIAK
Motion	24-param	24-param	24-param	scrubbing and 1st principal component of 6 motion parameters & their squares
Tissue signals	mean WM and CSF signals	CompCor (5 PCs)	mean WM and CSF signals	mean WM and CSF signals
Motion realignment	Yes	Yes	Yes	Yes
Low-frequency drifts	linear and quadratic trends	linear and quadratic trends	linear and quadratic trends	discrete cosine basis with a 0.01 Hz high-pass cut-off

Decision Node	Options
Pipeline	**cpac, ccs, dparsf, niak**
Parcellation	**rois_aal, rois_cc200, rois_dosenbach160**
Band-pass filtering	**True, False**
Global signal regression	**True, False**
Connectivity measure	**Pearson, Partial**

Don't get lost in the Garden of Forking paths

Think carefully about the analytical choices you can make!

Thank you for attending this workshop!

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