



Radboud University



DCCN and MEG/OPM lab procedures

Robert Oostenveld

Donders Institute, Radboud University, Nijmegen, NL
Karolinska Institutet, Stockholm, SE

robert.oostenveld@donders.ru.nl



Karolinska
Institutet



Operational Principles

All DCCN labs are shared and managed by the Technical Group (TG):

Erik van der Boogert (head)

Miranda Naaktgeboren (MEG, EEG and other lab manager)

Paul Gaalman (MRI lab manager)

Peter Vermeer (hardware, computers, cables, etc.)

Labs are used by researchers in the DCCN PI groups, but also by researchers at the other Donders centers and MPI. DCCN PIs are responsible and are “hosting” the researchers from the other centers.

When a researcher applies for funding, lab expenses are to be included in the budget.

MRI € 250/hour

SQUID-MEG € 560/hour

OPM-MEG € 90/hour

EEG € 30/hour

Project management

Projects are presented to the whole DCCN in the project proposal meeting (PPM)

- Fixed weekly timeslot, 15 minute presentation, usually a few per week

- Audience is informed, asks questions, comments ...

- Director approves

Requirements are checked

- Ethics, financial

- Realistic lab and/or computational resource requirements

Once approved, the project gets a number like 30xx0yy.zz

- xx = PI group, yy = grant application, zz = sequential number

- Registered in the project database, lab booking system

- Project directory on central storage and the repository/archive (disk quota)

DCCN project database

PORTAL

EXPLORE

FLOORMAP

CALENDARS

HELP

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Projects

People

Groups

Rooms

Locations

303

Number	Owner	Title	PPM Date	Status
3031008.02	Ailan Kalledat	Early development of statistical learning and relation to caregiver predictabilit...	2026-07-08	Active
3031011.01	Ziliang Xiong	Neural representations of human ticklishness	2026-06-10	Active
3032009.01	Xinjie Chen	Large-Scale Retrospective Normative Modeling of MP2RAGE-Derived Brain R...	2026-06-03	Active
3033012.01	Martin Dresler	Nutrition and sleep	2025-12-04	Active
3032002.03	Samuel Melke Gebremedhin	Optimizing acquisition protocols for Myelin Water Imaging	2025-11-27	Active
3032007.01	Fernando Fernández de Cuevas	Wired for Growth -- Imaging the Developing Brain	2025-11-13	Active
3031010.01	Tilman Stephani	Neural dynamics of self- and external touch and tickle perception	2025-10-23	Active
3032002.02	Marcel Zwiers	QuIDBBIDS toolbox development	2025-09-11	Active
3033009.01	Marieke van der Schaaf	Investigating Metabolic and Neuropathological interactions to Address Cognit...	2025-07-10	Active
3032002.01	Eva Guzmán Chacón	Optimizing open-source sequence development and image reconstruction	2025-06-26	Active

Lab training

Paul and Miranda provide training for the MRI, MEG and EEG labs, and researchers become certified to use the lab by themselves.

In the evenings and weekends a lab “buddy” is required.

Researchers do the data acquisition in principle by themselves.

Sometimes a research assistant (RA) is hired for the specific project

The DCCN has an RA pool shared over the PI groups.

Experimental design

All labs are relatively similar w.r.t. stimulus presentation and response equipment.

PsychToolBox, PsychoPy, or NBS Presentation.

In the MEG lab we have a PROPixx projector (up to 1440 fps).

Most labs have BrainAmp EEG amplifiers and ExG extension boxes.

Research data management

In the MEG and MRI labs people “pick” their lab booking from a menu

This provides the project number, researcher, and subject number

After the experiment the MEG and MRI data is automatically streamed to the project directory on the compute cluster and to the archive.

Other data (EEG, video, eye tracker, behavioral log files, ...) have to be copied manually

We recommend people to convert the data to BIDS immediately, and to implement all processing and analysis on the BIDS dataset.

MEG/EEG data -> FieldTrip data2bids

MRI data -> BIDScoin

MEG specific

CTF SQUID system is filled with liquid helium twice per week (Monday, Thursday). When full, the system cannot be tilted, hence supine or OPM recordings cannot be done on those days.

Switching between the SQUID and OPM MEG setup requires tilting the CTF dewar back and putting the OPM helmet in place.

The Helium boil-off is larger when tilted, hence we always move it back upright afterwards.

Switching between different OPM helmets requires swapping the sensors.



The Placement of Head Localization Coils

An overview of the possibilities for the placement of the coils is given in the following. The placement of the coils is determined by the position of the head, the position of the coils, and the position of the head relative to the coils. The distance between the coils and the head is determined by the position of the head relative to the coils. The distance between the coils and the head is determined by the position of the head relative to the coils.

It is recommended that the coils be placed as close to the head as possible. The coils should be placed as close to the head as possible. The coils should be placed as close to the head as possible. The coils should be placed as close to the head as possible.

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