

# Methods & models for fMRI data analysis – HS 2017



Translational Neuromodeling Unit



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Zürich<sup>UZH</sup>

**ETH**

Eidgenössische Technische Hochschule Zürich  
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# Exam details

- Date: 19.12.2017
- Time: 10:00 – 11:30
- Location: LFW E13 (same as the lecture hall).
- Bring with you: Something to write (pen), your Legi and an ID.
- No other material is allowed
- 36 MC questions, 90 min time

# Example questions

The following three example questions give you an idea of the type of questions in the exam.

!!! Important: These are three fictitious questions that do not give any indication of the content and/or difficulty of the real exam questions !!!

# Which of the following answers is correct?

- a) **fMRI measures the magnetic properties of glia cells.**
- b) **fMRI measures the ratio between gray and white matter movement.**
- c) **fMRI measures the BOLD signal.**
- d) **fMRI measures blood flow averaged over cortex.**
- e) **fMRI measures the total amount of blood in a cortical area.**

# Which of the following statements is NOT correct?

- a) **fMRI measures the magnetic properties of glia cells.**
- b) **fMRI measures a signal that depends on blood oxygenation.**
- c) **fMRI measures the BOLD signal.**
- d) **fMRI measures a signal that depends on the relative blood volume in a voxel.**
- e) **fMRI measures a signal that depends indirectly on neural activity.**

# Which combination of the following statements is correct?

- (1) fMRI measures the magnetic properties of glia cells.**
  - (2) fMRI measures the total amount of blood in a cortical area.**
  - (3) fMRI measures a signal that depends on blood oxygenation.**
  - (4) fMRI measures the BOLD signal.**
  - (5) fMRI measures the ratio between gray and white matter movement.**
- a) All five are correct**
  - b) (1), (3) and (4) are correct.**
  - c) Only (4) is correct**
  - d) (3) and (4) are correct.**
  - e) (2) and (4) are correct.**

# Solutions

C, A and D