

The general linear model for fMRI - tutorial

Methods and Models in fMRI, 17.10.2017

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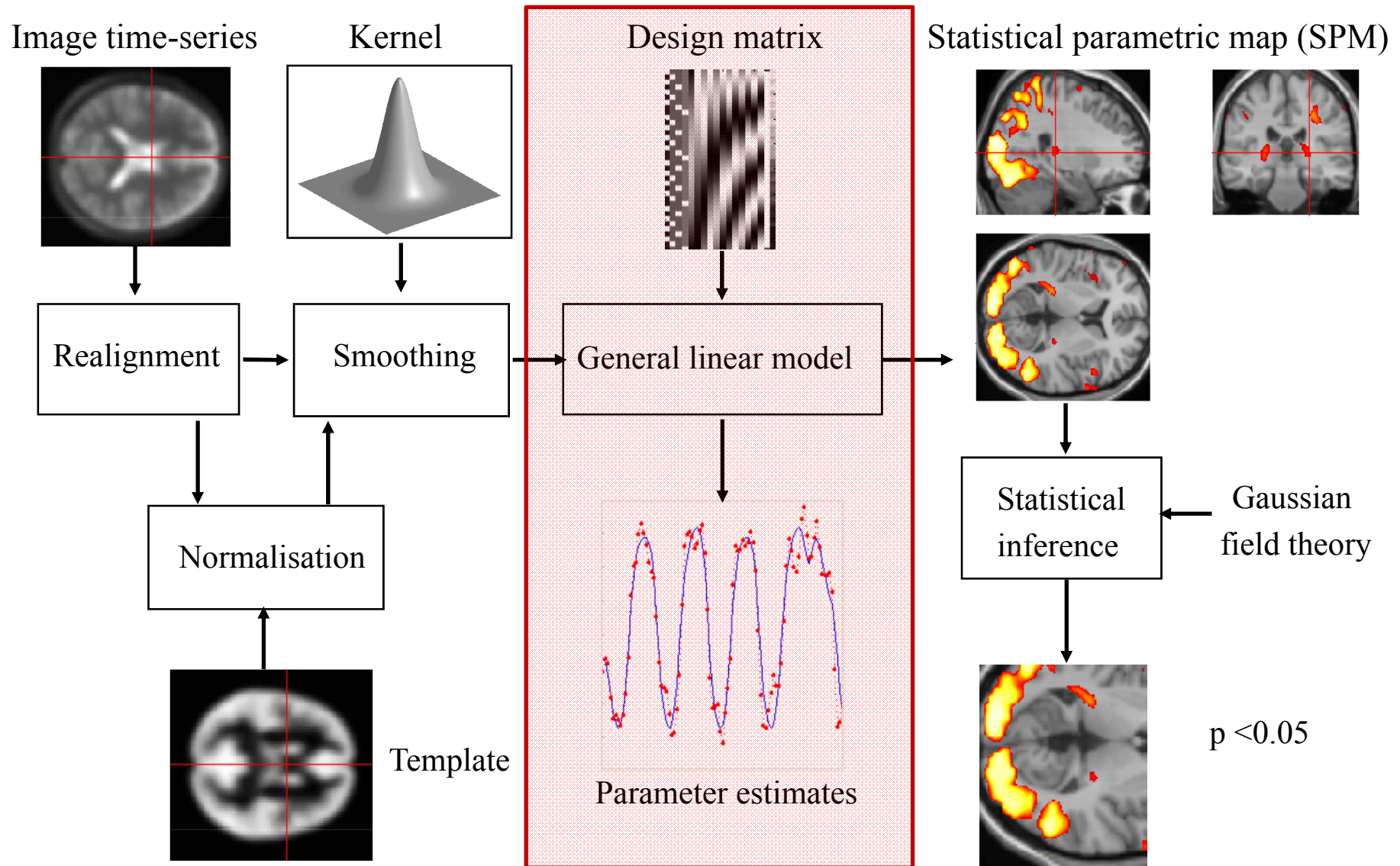


University of
Zurich^{UZH}

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Overview



General information

Scanning parameters:

TR = 2.2 s; slice order: ascending; number of slices = 32

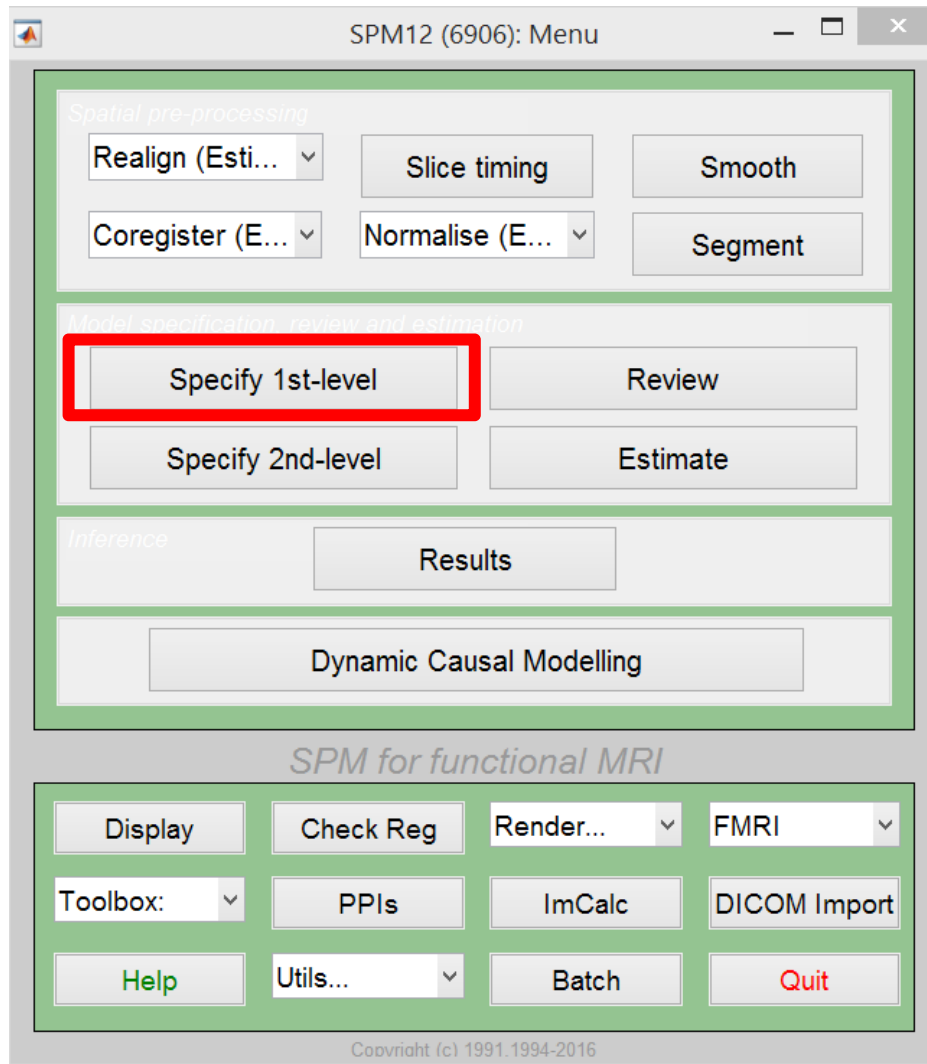
Behavioral parameters:

In the file Behavior Summary there are:

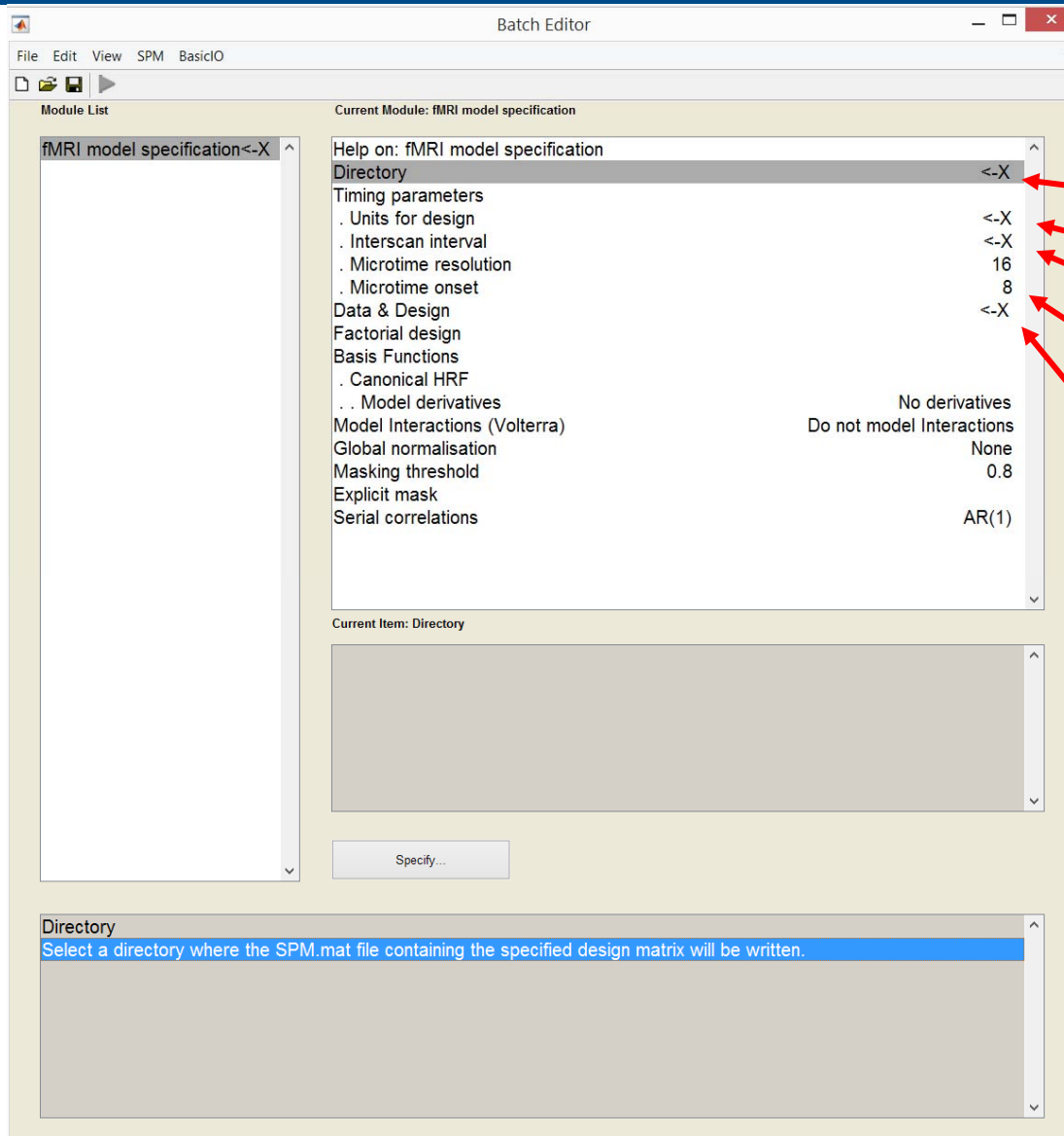
tLeftStim and tRightStim → time (after scanstart) of presentation of left or right arrow.

tLeftPress and tRightPress → time (after scanstart) of left or right button presses.

Specify first level



Set up design



Choose directory

Choose seconds

TR = 2.2 seconds

Number of slices 32

Then specify «Data & Design».

Data and Design

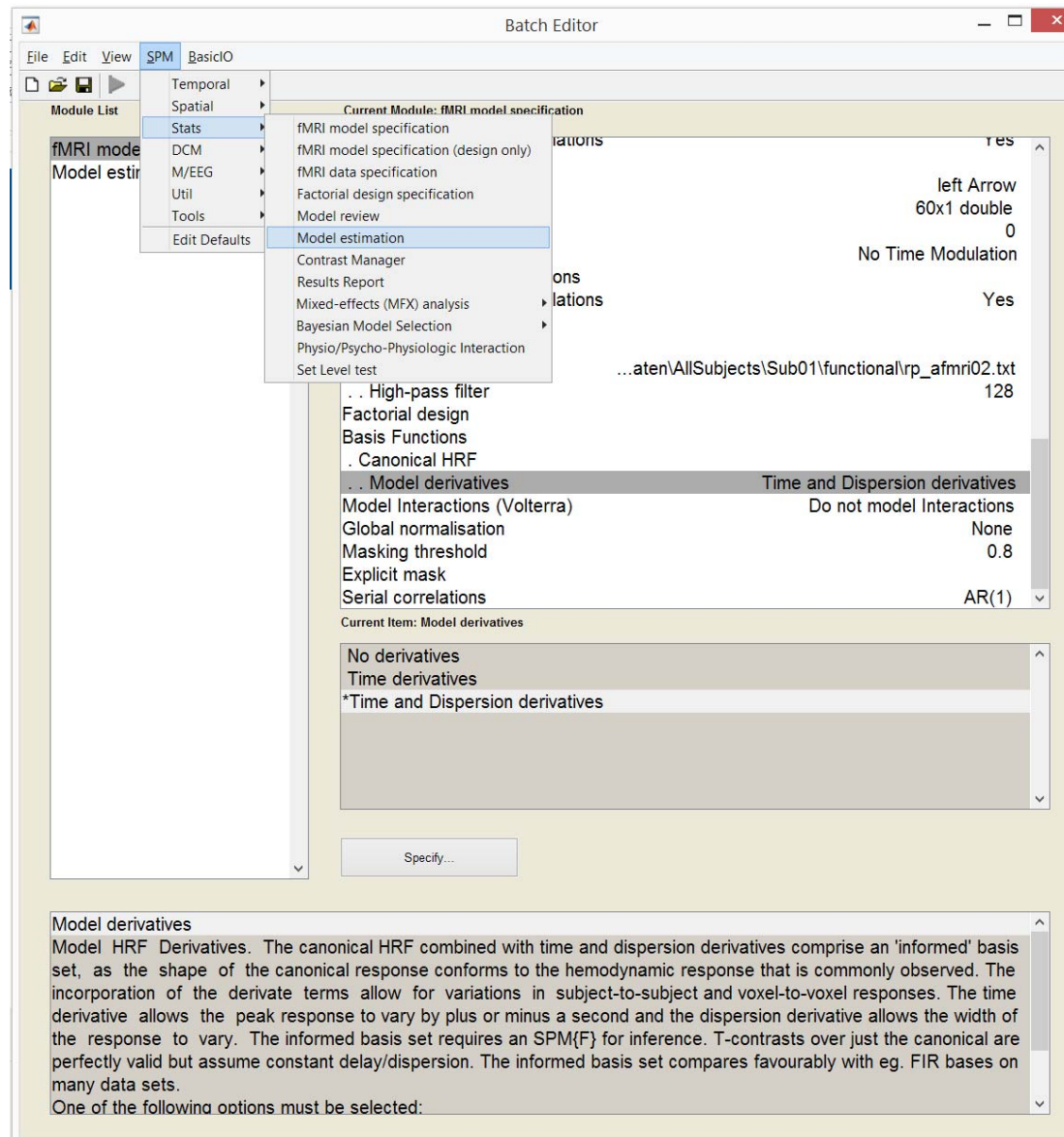
. Microtime onset 16
Data & Design
. Subject/Session
. . Scans 145 files
. . Conditions
. . . Condition
. . . . Name right Arrow
. . . . Onsets 60x1 double
. . . . Durations 0
. . . . Time Modulation No Time Modulation
. . . . Parametric Modulations
. . . . Orthogonalise modulations Yes
. . Multiple conditions
. . Regressors
. . Multiple regressors ...aten\AllSubjects\Sub01\functional\rp_afmri01.txt
. . High-pass filter 128
Factorial design
Basis Functions
. Canonical HRF
. . Model derivatives No derivatives
Model Interactions (Volterra) Do not model Interactions
Current Item: Multiple regressors
E:\DocumentsNobox\MandMDaten\AllSubjects\Sub01\functional\rp_afmri01.txt

Specify design using timing from behavior. Concentrate on either Sitm or Press. Set duration = 0s.

Include movement

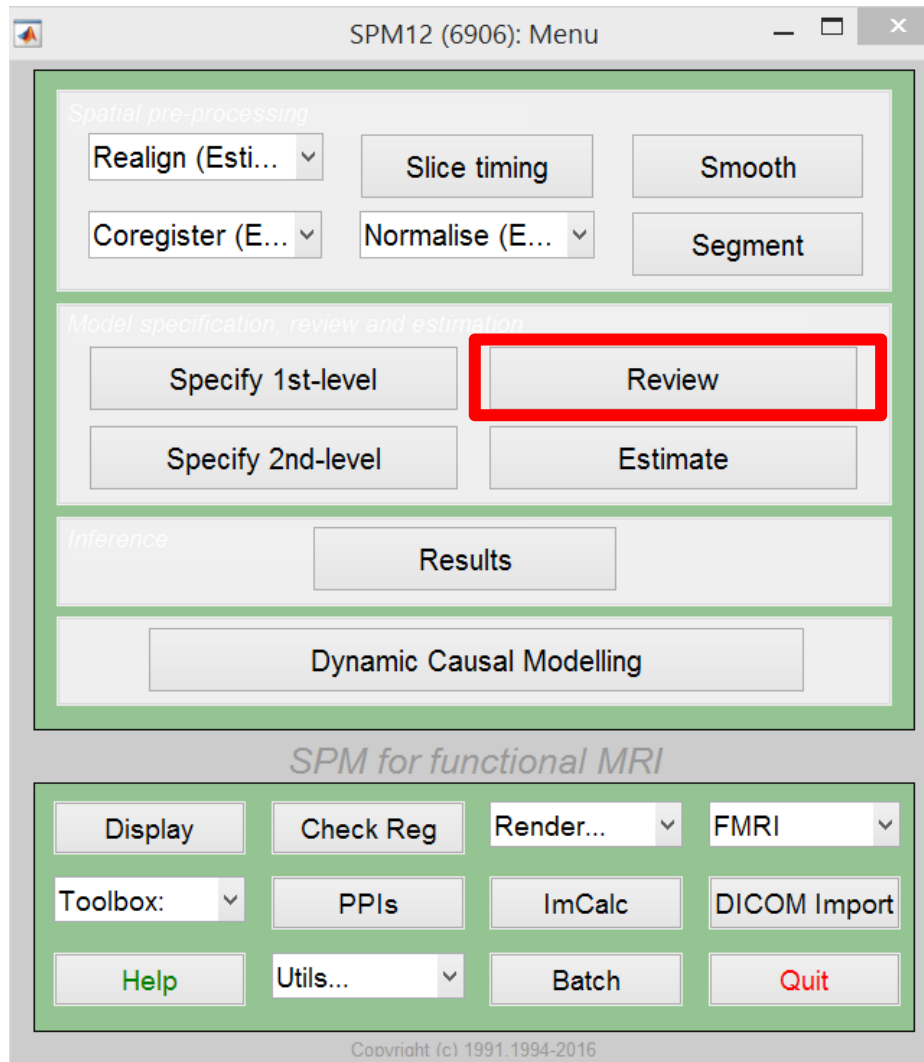
Don't forget 2nd condition!
Repeat for second run!

Estimate the model



and run everything!

Review Design



And also explore what is in the struct SPM, saved in SPM.mat.

Use Check Reg to look at the new images beta_0001.nii etc, ResMS.nii, mask.nii, RPV.nii