**Allread MRI Preprocessing pipeline**

This document explains the preprocessing pipeline used for the AllRead MRI files

The preprocessing pipeline consists of five scripts. To use it, you will only have to use modify 2 of them (italic)

1. ***allread\_preproc\_par.m (wrapper)***
2. allread\_create\_matlabbatch.m
3. allread\_get\_b0\_echoes.m
4. ***allread\_get\_b0mapping.m***
5. allread\_create\_fieldmap.m

**0. Preparation**

* Make sure that all files in each subject’s raw folder *O>studies>allread>mri>raw>ARxxxx* are **NOT** in subfolders.
* convert files from parrec > nifti in the subject’s raw folder
* copy b0, eread, feedback, symctrl and t1 files to the corresponding preprocessing subfolder
* make sure there is
  + 1 block of Eread (eread)
  + 2 blocks of FBLearning (feedback), (if there are more than 2 blocks, decide before which ones will be used for analysis)
  + 1 block of face localizer (faceloc)
  + 1 block of implicit task (symctrl)
* Since the tasks do not have the same scanning sequences, you cannot preprocess them at once. Therefore, you will have to adjust certain parameters in the file before preprocess another task

1. **allread\_preproc\_par.m (wrapper-file)**

% define which subjects you wish to preprocess  
*23* subjects = {‘…’,’…’,…}

% define task to process [eread, feedback, faceloc, implicit]: only choose 1!  
29 paths.epis = {‘…’}

% define task to process [eread, feedback, faceloc, implicit]: only choose 1! (29 and 33 look the same)  
33 tasklist = {‘…’}

1. **allread\_get\_b0mapping.m**

Indicate which sequences of subject ARxxxx were the b0. The sequence number can be found in the name of the B0 files. There are 3 B0s for each subject (1 for eread, 1 for learning, 1 for faceloc & implicit).

mr\_15082019\_144528\_**2**\_1\_b0\_eread\_ec1\_typ3.nii  
mr\_15082019\_150001\_**5**\_1\_b0\_learn\_ec1\_typ0.nii  
mr\_15082019\_155235\_**9**\_1\_b0\_symctrl\_ec1\_typ0.nii  
  
The script assigns a B0 to each task, thus we need 4 assignments. These 4 numbers are then added to the cell B0mapping, beginning at l20, with the number for eread, feedback, faceloc and symctrl. Note that by default, faceloc and symctrl have the same number.

20 b0mapping = { [2, 5, 9, 9], […], … }

If you preprocess a new subject, do **NOT** delete the information of the subjects preprocessed so far. Just add the new subject at the correct place (numerically).

Also, add the subject name at the right place in the subjects-cell:

*l35* (will probably change) subjects = {‘…’,.’…’,…}