SENECA-PICASSO scripts

All files and folders must be in BIDS format.

Always manually specify the path where the files are.

MatLab

Some scripts are to be run for each subject while others are optimized to find all subjects and sessions automatically.

- **Set_BIDS**
  This script is used to sort the dicom images -contained in the fmp folder for each subject and session- into magnitude, imaginary or real. This will be later used by the SPM batch file when creating the fieldmap.
- **BIDS_dcm2nii**
  This script is used to find all subjects and sessions in the manually specified folder. It reads all dicom images and convert them into .niii files. Folder implemented are: anat, func, dwi and fmap.
- **SP_fieldmap**
  This script is used to create the fieldmaps suing SPM (must be installed). You can also do it manually through the SPM interface. Note it reads the json files so do not delete them (automatically created by BIDS_dcm2nii).

Python

- **FSLaso-topup.ipynb**
  This script is used to run all FSL commands to create a fieldmap. It calls:
  - *Fslroi* to get one volume of each image (because in our case only the first was volume was wanted).
  - *Fslflirt* to set the dwi image to those dimensions of the fmap image.
  - *Fslmerge* to join both images.
  - Enter the previous image in *topup*, along with params -created at the beginning- and returns many files, including fieldmap and corrected images.
  - *ApplyTopup* to finish up.

Contact me :)