structural_preproc_local_STANDARD.m	**structural_preproc.m**
/home/michele/Documents/FastTrack_fullSample/SCRIPTS/structural_preproc_local_STANDARD.m	/home/michele/Documents/FastTrack_fullSample/orig_sof
Thu Feb 20 15:47:28 GMT 2020	Thu Aug 15 10:37:12 BST 2019

35 differences found. Use the toolstrip buttons to navigate to them.

```
                                                                                                [5 unmodified lines hidden]
 6 %%%%%%%%%%%%%%%%%%                                                                          . %%%%%%%%%%%%%%%%%%
 7                                                                                              .
 8 %% setup                                                                                     . %% setup
 9  [~,hostname] = system('hostname');                                                          x [~,hostname] = system('hostname');
10  switch deblank(hostname)                                                                   x switch deblank(hostname)
11      case 'michele-Precision-7530'                                                          x     case 'fslvm6.localdomain'
12          setenv('FOLDER','/home/michele/Documents/FastTrack_fullSample')                    x         bpath ='xxx';
13          setenv('FSLDIR','/usr/local/fsl')                                                  x     case 'xxx'
14          setenv('FREESURFER_HOME','/usr/local/freesurfer')                                  x         bpath = 'xxx';
15          setenv('SUBJLIST', 'subj_list_39x1.txt') %                                         <
16          setenv('SGE_TASK_ID','1')                                                          <
17          setenv('NSLOTS','8')                                                               <
18  end                                                                                        x end
19                                                                                             .
20 wrk_path = getenv('FOLDER');                                                               x vps = [3:24 26 28:38 40 41 43:45];
21 bpath = fullfile(wrk_path , 'processing');                                                  <
22                                                                                             .
23 do_dcm2nii = 0;                                                                            . do_dcm2nii = 0;
24 do_t1uniXinv2 = 0; %mp2rage: multiply t1_uni with t1_inv2 for better brain extra           . do_t1uniXinv2 = 0; %mp2rage: multiply t1_uni with
                                                                                                [10 unmodified lines hidden]
35 do_fsseg = 0;                                                                              . do_fsseg = 0;
36 do_overlap = 0;                                                                            . do_overlap = 0;
37                                                                                             .
38 fsl_path = getenv('FSLDIR');                                                               x fsl_path = '/usr/local/fsl';
39 fs_path = getenv('FREESURFER_HOME');                                                       x fs_path = '/usr/local/freesurfer';
40 fssub_path = fullfile(bpath,'freesurfer_subjects');                                        . fssub_path = fullfile(bpath,'freesurfer_subjects'
41 dicom_path = fullfile(bpath, 'raw'); %rawdata                                              . dicom_path = fullfile(bpath, 'raw'); %rawdata
42 nii_path = fullfile(bpath, 'nifti');                                                       . nii_path = fullfile(bpath, 'nifti');
                                                                                                [3 unmodified lines hidden]
46 datasets = {'t1_mp2rage_uni', 't2'};                                                       . datasets = {'t1_mp2rage_uni', 't2'};
47 direcs = {'t2w2t1wReg', 'ACPCAlignment', 'BrainExtraction_FNIRTbased', 'xfms', '         . direcs = {'t2w2t1wReg', 'ACPCAlignment', 'BrainExt
48                                                                                             .
49 % ADDED BY ME %%%%%%%%%                                                                   <
50 subj_list = getenv('SUBJLIST');                                                           <
51                                                                                           <
52                                                                                           <
53                                                                                           <
54 dowloaded_data = fullfile(wrk_path,'data_mri');                                           <
55 n_cores = getenv('NSLOTS');                                                               <
56 %%%%%%%%%%%%%%%%                                                                         <
57                                                                                           <
58                                                                                           <
59 ref_t1_1mm = fullfile(fsl_path,'data','standard','MNI152_T1_1mm.nii.gz');                  . ref_t1_1mm = fullfile(fsl_path,'data','standard',
60 ref_t1_1mm_brain = fullfile(fsl_path,'data','standard','MNI152_T1_1mm_brain.nii.          . ref_t1_1mm_brain = fullfile(fsl_path,'data','stand
61 ref_t1_1mm_mask = fullfile(fsl_path,'data','standard','MNI152_T1_1mm_brain_mask_         . ref_t1_1mm_mask = fullfile(fsl_path,'data','standa
                                                                                                [8 unmodified lines hidden]
70     '--match 9 --match 10 --match 11 --match 12 --match 13 --match 17 --match 18       .     '--match 9 --match 10 --match 11 --match 12 --
71     '--match 1025 --match 2025', '--match 1008','--match 1007','--match 1013 --m       .     '--match 1025 --match 2025', '--match 1008','-
72                                                                                             .
73                                                                                           <
74 % import subj list for parallelization                                                    <
75 %subj_list = fullfile(wrk_path,'subj_list_2x1.txt');  %fullfile(wrk_path,'subj_l        <
76 fid = fopen(subj_list,'r');                                                               <
77 linenum = str2double(getenv('SGE_TASK_ID'));                                            <
78 format_spec = '%d'; % This must reflect the columns in the file e.g.: format_spe        <
79 vps = cell2mat(textscan(fid,format_spec, 39,'delimiter','\n', 'headerlines',int3        <
80                                                                                           <
81                                                                                           <
82 %% do work                                                                              . %% do work
83 for n_vp = 1:length(vps)                                                                . for n_vp = 1:length(vps)
84     vp_path = fullfile(nii_path,sprintf('VP%03d',vps(n_vp)));                            .     vp_path = fullfile(nii_path,sprintf('VP%03d',v
                                                                                                [16 unmodified lines hidden]
101         mkdir(mnifsxfms_path)                                                           .         mkdir(mnifsxfms_path)
102         mkdir(mnifs_path)                                                               .         mkdir(mnifs_path)
103     end                                                                                 .     end
104     %%%% ADDED BY ME %%%%                                                             <
105     subj_fold = fullfile(dowloaded_data,sprintf('ID%03d',vps(n_vp)));                   <
106     struct_data = fullfile(subj_fold,'highres');                                        <
107     t1_uni_defaced = fullfile(struct_data,'t1_mp2rage_sag_p3_iso_uni_defaced.nii        <
108     t1_inv_defaced = fullfile(struct_data,'t1_mp2rage_sag_p3_iso_inv2_defaced.ni        <
109     t2_defaced = fullfile(struct_data,'t2w_spc_sag_p2_iso0.8_defaced.nii.gz');          <
110     % this is to obtain the T2 MNI152 that should be compatible with the script        <
111 %   system('flirt -in /usr/local/fsl/data/standard/mni_icbm152_t2_tal_nlin_asym        <
112 %   system('flirt -in /usr/local/fsl/data/standard/mni_icbm152_t2_tal_nlin_asym        <
113     %%%%%%%%%%%%%%%%%%                                                              <
114                                                                                           <
115     for set=1:length(datasets)                                                          .     for set=1:length(datasets)
116         set_path = fullfile(sess_path,datasets{set});                                   .         set_path = fullfile(sess_path,datasets{set
117                                                                                           <
118         %%%% ADDED BY ME %%%%                                                           <
119         if ~exist(set_path,'dir')                                                       <
120                 mkdir(set_path)                                                         <
121         end                                                                             <
122         if set == 1                                                                     <
123             t1_uni = fullfile(set_path, 't1_uni.nii.gz');                               <
124             t1_inv = fullfile(set_path, 't1_inv2.nii.gz');                              <
125             system(['cp ' t1_uni_defaced ' ' t1_uni ], '-echo');                        <
126             system(['cp ' t1_inv_defaced ' ' t1_inv ], '-echo');                        <
127         elseif set == 2                                                                 <
128             t2 = fullfile(set_path, 'T2.nii.gz');                                       <
129             system(['cp ' t2_defaced ' ' t2 ], '-echo');                                <
130         end                                                                             <
131         %%%%%%%%%%%%%%%%%%                                                            <
132                                                                                           <
```

```
133         %dcm2nii                                                                    .         %dcm2nii
134         if do_dcm2nii                                                               .         if do_dcm2nii
135             if ~exist(set_path,'dir')                                               .             if ~exist(set_path,'dir')
                                                                    [80 unmodified lines hidden]
216         acpc_wd = fullfile(set_path,'ACPCAlignment');                               .         acpc_wd = fullfile(set_path,'ACPCAlignment
217         acpc_in = fullfile(set_path,sprintf('%sw_reoriented.nii.gz',datasets{set    .         acpc_in = fullfile(set_path,sprintf('%sw_
218         if set ==1                                                                  .         if set ==1
219             acpc_tmp_in = fullfile(set_path,'t1mult_reoriented.nii.gz'); % ADDED    <
220             acpc_ref = ref_t1_1mm;                                                  .             acpc_ref = ref_t1_1mm;
221         elseif set ==2                                                              .         elseif set ==2
222             acpc_tmp_in = acpc_in; % ADDED BY ME !!!!!                              <
223             acpc_ref = fullfile(bpath,'analysis','MNI_t2w_templates','MNI152_T2_    .             acpc_ref = fullfile(bpath,'analysis',
224         end                                                                         .         end
225         acpc_out = fullfile(set_path,sprintf('%sw_acpc.nii.gz',datasets{set}(1:2    .         acpc_out = fullfile(set_path,sprintf('%sw_
                                                                    [4 unmodified lines hidden]
230             robustroi=fullfile(acpc_wd,'robustroi.nii.gz');                         .             robustroi=fullfile(acpc_wd,'robustroi
231             roi2full = fullfile(acpc_wd,'roi2full.mat');                            .             roi2full = fullfile(acpc_wd,'roi2full
232             cropcmd=sprintf('robustfov -i %s -m %s -r %s -b 170 -v',...             .             cropcmd=sprintf('robustfov -i %s -m %s
233                 acpc_tmp_in, roi2full, robustroi);  % MODIFIED BY ME (acpc_in ->    x                 acpc_in, roi2full, robustroi);
234             fprintf('%s\n',cropcmd)                                                 .             fprintf('%s\n',cropcmd)
235             system(cropcmd, '-echo');                                               .             system(cropcmd, '-echo');
236             full2roi = fullfile(acpc_wd,'full2roi.mat');                            .             full2roi = fullfile(acpc_wd,'full2roi
                                                                    [33 unmodified lines hidden]
270                 system(multwarp, '-echo');                                          .                 system(multwarp, '-echo');
271             end                                                                     .             end
272             %QA                                                                     .             %QA
273 %             zcmd = sprintf('fsleyes %s', robustroi); % MODIFIED BY ME (fslview    x             zcmd = sprintf('fslview %s', robustroi
274 %             system(zcmd);                                                         x             system(zcmd);
275 %             zcmd = sprintf('fsleyes %s %s %s', acpc_reffr, acpc_final, acpc_ou    x             zcmd = sprintf('fslview %s %s %s', acp
276 %             system(zcmd);                                                         x             system(zcmd);
277         end                                                                         .         end
278                                                                                     .
279         %% initial brain extraction                                                .         %% initial brain extraction
                                                                    [47 unmodified lines hidden]
327             fprintf('%s\n',mathcmd)                                                 .             fprintf('%s\n',mathcmd)
328             system(mathcmd, '-echo');                                               .             system(mathcmd, '-echo');
329             %QA                                                                     .             %QA
330 %             zcmd = sprintf('fsleyes %s %s -l Red -t 0.5', acpc_out, be_outbrai    x             zcmd = sprintf('fslview %s %s -l Red -
331 %             system(zcmd);                                                         x             system(zcmd);
332 %             zcmd = sprintf('fsleyes %s %s -t 0.5', be_ref2mm, acpc2MNI_lin);      x             zcmd = sprintf('fslview %s %s -t 0.5',
333 %             system(zcmd);                                                         x             system(zcmd);
334 %             zcmd = sprintf('fsleyes %s %s -t 0.5', acpc_ref, acpc2MNI_nonlin);    x             zcmd = sprintf('fslview %s %s -t 0.5',
335 %             system(zcmd);                                                         x             system(zcmd);
336         end                                                                         .         end
337     end                                                                             .     end
338                                                                                     .
                                                                    [43 unmodified lines hidden]
382         fprintf('%s\n',copy3cmd)                                                    .         fprintf('%s\n',copy3cmd)
383         system(copy3cmd, '-echo');                                                  .         system(copy3cmd, '-echo');
384         conv3cmd=sprintf('convertwarp --relout --rel -r %s -w %s --postmat=%s --    .         conv3cmd=sprintf('convertwarp --relout --
385             t2_acpc_dc, t1_dc_transform     , t2w2t1w_mat, t2_dc_transform);        x             t2_acpc_dc, t1_dc_transform, t2w2t1w_
386         fprintf('%s\n',conv3cmd)                                                    .         fprintf('%s\n',conv3cmd)
387         system(conv3cmd, '-echo');                                                  .         system(conv3cmd, '-echo');
388         %QA ???????????????                                                         x         %QA
389 %        if n_vp==1                                                                 x         if n_vp==1
390 %            sl1 = [t1_acpc_dc ' ' t2_acpc_dc];                                     x             sl1 = [t1_acpc_dc ' ' t2_acpc_dc];
391 %        else                                                                       x         else
392 %            sl1 = [sl1 ' ' t1_acpc_dc ' ' t2_acpc_dc];                             x             sl1 = [sl1 ' ' t1_acpc_dc ' ' t2_acpc_
393 %        end                                                                        x         end
394 %        if n_vp==length(vps)                                                       x         if n_vp==length(vps)
395 %            cd(qa_path);                                                           x             cd(qa_path);
396 %            slname = 'slicesdir_t22t1reg';                                         x             slname = 'slicesdir_t22t1reg';
397 %            sl = sprintf('slicesdir -o %s', sl1);                                  x             sl = sprintf('slicesdir -o %s', sl1);
398 %            fprintf('%s\n', sl);                                                   x             fprintf('%s\n', sl);
399 %            system(sl, '-echo');                                                   x             system(sl, '-echo');
400 %            movefile(fullfile(qa_path,'slicesdir'), fullfile(qa_path,slname));     x             movefile(fullfile(qa_path,'slicesdir'
401 %        end                                                                        x         end
402     end                                                                             .     end
403                                                                                     .
404     %% bias field correction based on sqrt T1w*T2w                                 .     %% bias field correction based on sqrt T1w*T2
                                                                    [91 unmodified lines hidden]
496         fprintf('%s\n',bfc4cmd)                                                     .         fprintf('%s\n',bfc4cmd)
497         system(bfc4cmd,'-echo');                                                    .         system(bfc4cmd,'-echo');
498         %QA                                                                         .         %QA
499 %        if n_vp == 1                                                               x         if n_vp == 1
500 %            sl1 = [t1_acpc_dc_brain ' ' t1_acpc_dc_rest_brain];                    x             sl1 = [t1_acpc_dc_brain ' ' t1_acpc_dc
501 %            sl2 = [t2_acpc_dc ' ' t2_acpc_dc_rest];                                x             sl2 = [t2_acpc_dc ' ' t2_acpc_dc_rest
502 %        else                                                                       x         else
503 %            sl1 = [sl1 ' ' t1_acpc_dc_brain ' ' t1_acpc_dc_rest_brain];            x             sl1 = [sl1 ' ' t1_acpc_dc_brain ' ' t1
504 %            sl2 = [sl2 ' ' t2_acpc_dc ' ' t2_acpc_dc_rest];                        x             sl2 = [sl2 ' ' t2_acpc_dc ' ' t2_acpc_
505 %        end                                                                        x         end
506 %        if n_vp==length(vps)                                                       x         if n_vp==length(vps)
507 %            cd(qa_path);                                                           x             cd(qa_path);
508 %            slname = {'slicesdir_t1_bfc', 'slicesdir_t2_bfc'};                     x             slname = {'slicesdir_t1_bfc', 'slicesd
509 %            for slx = 1:length(slname)                                             x             for slx = 1:length(slname)
510 %                if slx ==1                                                         x                 if slx ==1
511 %                    sl = sprintf('slicesdir %s', sl1);                             x                     sl = sprintf('slicesdir %s', s
512 %                else                                                               x                 else
513 %                    sl = sprintf('slicesdir %s', sl2);                             x                     sl = sprintf('slicesdir %s', s
514 %                end                                                                x                 end
515 %                system(sl, '-echo');                                               x                 system(sl, '-echo');
516 %                movefile(fullfile(qa_path,'slicesdir'), fullfile(qa_path,slname    x                 movefile(fullfile(qa_path,'slicesd
517 %            end                                                                    x             end
518 %        end                                                                        x         end
519     end                                                                             .     end
520                                                                                     .
521     %% reg to MNI                                                                  .     %% reg to MNI
                                                                    [24 unmodified lines hidden]
546             t1_acpc_dc_rest, ref_t1_2mm, acpc2mnilin, ref_t1_2mm_mask, acpc_dc2s    .             t1_acpc_dc_rest, ref_t1_2mm, acpc2mnil
547         fprintf('%s\n',mnireg2cmd)                                                  .         fprintf('%s\n',mnireg2cmd)
548         system(mnireg2cmd,'-echo');                                                 .         system(mnireg2cmd,'-echo');
549          inv2cmd=sprintf('invwarp -w %s -o %s -r %s -v', ...                        x         inv2cmd=sprintf('invwarp -w %s -o %s -r %s
550             acpc_dc2std, std2acpc_dc, ref_t1_2mm);                                  .             acpc_dc2std, std2acpc_dc, ref_t1_2mm);
551         fprintf('%s\n',inv2cmd)                                                     .         fprintf('%s\n',inv2cmd)
```

```
552         system(inv2cmd,'-echo');                                                    .         system(inv2cmd,'-echo');
                                                                                [33 unmodified lines hidden]
586         system(mnimask2cmd,'-echo');                                                .         system(mnimask2cmd,'-echo');
587                                                                                     .
588         %QA                                                                         .         %QA
589 %        zcmd = sprintf('fslview %s %s', ref_t1_1mm, mni_t1_rest);                   x         zcmd = sprintf('fslview %s %s', ref_t1_1mr
590 %        system(zcmd);                                                              x         system(zcmd);
591 %        zcmd = sprintf('fslview %s %s', ref_t1_1mm, mni_t2_rest);                   x         zcmd = sprintf('fslview %s %s', ref_t1_1mr
592 %        system(zcmd);                                                              x         system(zcmd);
593     end                                                                             .     end
594                                                                                     .
595     %% freesurfer                                                                  .     %% freesurfer
                                                                                 [5 unmodified lines hidden]
601     fs_nu = fullfile(fsmri_path,'nu.mgz');                                          .     fs_nu = fullfile(fsmri_path,'nu.mgz');
602     fs_t1 = fullfile(fsmri_path,'T1.mgz');                                          .     fs_t1 = fullfile(fsmri_path,'T1.mgz');
603     fs_talaiwskull = fullfile(fsmri_path,'transforms','talairach_with_skull.lta' .     fs_talaiwskull = fullfile(fsmri_path,'transfor
604     % MODIFIED BY ME  !!!!!!!                                                     <
605     %{                                                                          <
606     fs_gca1 = fullfile(fs_path,'average','RB_all_2008-03-26.gca');              .     fs_gca1 = fullfile(fs_path,'average','RB_all_2
607     fs_gca2 = fullfile(fs_path,'average','RB_all_withskull_2008-03-26.gca');    .     fs_gca2 = fullfile(fs_path,'average','RB_all_w
608     %}                                                                          x     if do_freesurfer1
609     fs_gca1 = fullfile(fs_path,'average','RB_all_2016-05-10.vc700.gca');        <
610     fs_gca2 = fullfile(fs_path,'average','RB_all_withskull_2016-05-10.vc700.gca' <
611                                                                                 <
612     % ADDED BY ME !!!!!!!!!!!! I'm trying to export the SUBJDIR path but it     <
613     subjDir_path = fullfile(bpath,'freesurfer_subjects');                       <
614     system(['mkdir -p ' subjDir_path], '-echo');                                <
615     setenv('SUBJECTS_DIR',subjDir_path)                                         <
616     system('echo $SUBJECTS_DIR');                                               <
617     % ADDED BY ME !!!!!!!!!!!!                                                  <
618                                                                                 <
619                                                                                 <
620     if do_freesurfer1 % It takes ~200 seconds no parallelization                <
621         zcmd = sprintf('recon-all -i %s -subjid %s -motioncor -talairach -nuinte .         zcmd = sprintf('recon-all -i %s -subjid %s
622             t1_acpc_dc_rest, fs_subjID);                                        .             t1_acpc_dc_rest, fs_subjID);
623         fprintf('%s\n',zcmd);                                                   .         fprintf('%s\n',zcmd);
624         system(zcmd);                                                           .         system(zcmd);
 -                                                                                  >
625         %%if talairach transform fails: register t1 to mni manually             .         %%if talairach transform fails: register t
626 %         zcmd=sprintf('recon-all -i %s -subjid %s -motioncor -talairach -notalc . %         zcmd=sprintf('recon-all -i %s -subjid %s
627 %             t1_acpc_dc_rest, fs_subjID);                                      . %             t1_acpc_dc_rest, fs_subjID);
                                                                                [16 unmodified lines hidden]
644 %         system(zcmd);                                                         . %         system(zcmd);
645     end                                                                         .     end
646                                                                                 .
647     if do_prefreesurfer2 % It takes ~ 400 seconds                               x     if do_prefreesurfer2
648         %generate brain mask                                                    .         %generate brain mask
649         tic                                                                     <
650         zcmd=sprintf('mri_convert %s %s --conform', ...                         .         zcmd=sprintf('mri_convert %s %s --conform
651             t1_acpc_dc_rest_brain, fs_brainmask); %--conform to 1mm voxel size i .             t1_acpc_dc_rest_brain, fs_brainmask);
652         fprintf('%s\n',zcmd)                                                    .         fprintf('%s\n',zcmd)
653         system(zcmd);                                                           .         system(zcmd);
654                                                                                 .
655         zcmd=sprintf('mri_em_register -mask %s %s %s %s', ...                   .         zcmd=sprintf('mri_em_register -mask %s %s
656             fs_brainmask, fs_nu, fs_gca1, fs_talaiwskull); % (added comment) cre x             fs_brainmask, fs_nu, fs_gca1, fs_talai
657         fprintf('%s\n',zcmd)                                                    .         fprintf('%s\n',zcmd)
658         system(zcmd);                                                           .         system(zcmd);
659                                                                                 .
660         zcmd=sprintf('mri_watershed -T1 -brain_atlas %s %s %s %s', ...          .         zcmd=sprintf('mri_watershed -T1 -brain_atl
661             fs_gca2, fs_talaiwskull, fs_t1, fs_brainmaskauto); % (added comment) x         fs_gca2, fs_talaiwskull, fs_t1, fs_bra
662         fprintf('%s\n',zcmd)                                                    .         fprintf('%s\n',zcmd)
663         system(zcmd);                                                           .         system(zcmd);
664         toc                                                                     x
665         %%if watershed error: T1 does not have enough wm values of 110, then pro .         %%if watershed error: T1 does not have enc
666         %%-- add control points to nu.mgz and rerun normalization and watershed  .         %%-- add control points to nu.mgz and reru
667 %         controldir = fullfile(fssub_path,fs_subjID,'tmp');                    . %         controldir = fullfile(fssub_path,fs_subj
                                                                                [18 unmodified lines hidden]
686 %         fprintf('%s\n',zcmd)                                                  . %         fprintf('%s\n',zcmd)
687 %         system(zcmd);                                                         . %         system(zcmd);
688                                                                                 .
689                                                                                 <
690 % I UNCOMMENTED THIS BECAUSE THERE WHERE DURA LEFT IN THE BRAIN MASK AND        <
691 % THE SENCOND STEP OF FREESURFER WAS FAILING (IT SEEMS TO WORK NOW)            <
692         %%then if still parts of dura left can try                              .         %%then if still parts of dura left can try
693         %option 1 gcut                                                          x %         %option 1 gcut
694         %old brainmask file is saved in subj/trash                              x %         %old brainmask file is saved in subj/tra
695         tic                                                                     <
696         zcmd=sprintf('recon-all -skullstrip -clean-bm -gcut -subjid %s', ...    x %         zcmd=sprintf('recon-all -skullstrip -cle
697             fs_subjID);                                                         x %             fs_subjID);
698         fprintf('%s\n',zcmd)                                                    x %         fprintf('%s\n',zcmd)
699         system(zcmd);                                                           x %         system(zcmd);
700         %and check                                                              x %         %and check
701 %        zcmd=sprintf('fsleyes -v %s $SUBJECTS_DIR/%s/mri/brainmask.gcuts.mgz:co x %         zcmd=sprintf('freeview -v %s $SUBJECTS_D
702 %            old_brainmaskauto, fs_subjID);                                     x %             old_brainmaskauto, fs_subjID);
703 %        system(zcmd);                                                          x %         system(zcmd);
704         %option 2 if gcut fails then lower preflooding height of watershed      x %         %option 2 if gcut fails then lower prefl
705         %(default 25) to 15                                                     x %         %(default 25) to 15
706 %         zcmd=sprintf('recon-all -skullstrip -wsthresh 15 -clean-bm -subjid %s' . %         zcmd=sprintf('recon-all -skullstrip -wst
707 %             fs_subjID);                                                       . %             fs_subjID);
708 %         fprintf('%s\n',zcmd)                                                  . %         fprintf('%s\n',zcmd)
709 %         system(zcmd);                                                         . %         system(zcmd);
710         %and check                                                              x %         %and check
711 %        zcmd=sprintf('freeview -v %s $SUBJECTS_DIR/%s/mri/brainmask.mgz:colorma x %         zcmd=sprintf('freeview -v %s $SUBJECTS_D
712 %        system(zcmd);                                                          x %         system(zcmd);
713         toc                                                                     <
714         % ADDED BY ME !!!                                                      <
715 %         % if the segmentation is too aggressive use the following command     <
716 %         % to manually adjust the brain mask (see also                        <
717 %         % https://surfer.nmr.mgh.harvard.edu/fswiki/FsTutorial/SkullStripFix_t <
718 %         zcmd=sprintf('tkmedit %s brainmask.mgz -aux T1.mgz', ...             <
719 %             fs_subjID);                                                     <
720 %         fprintf('%s\n',zcmd)                                                <
721 %         system(zcmd);                                                       <
```

```
722                                                                                                 <
723                                                                                                 <
724     end                                                                                         .     end
725                                                                                                 .
726    if do_freesurfer2                                                                            x     if do_freesurfer2
727        recon2cmd=sprintf('recon-all -subjid %s -autorecon2 -parallel -openmp %s'                x         recon2cmd=sprintf('recon-all -subjid %s -a
728            fs_subjID, n_cores);                                                                 x             fs_subjID);
729        fprintf('%s\n',recon2cmd);                                                               x         fprintf('%s\n',recon2cmd);
730        system(recon2cmd);                                                                       x         system(recon2cmd);
731         %if big defects during fix topology check unfixed surfaces to see if sku                x         %%if big defects during fix topology check
732 %         hemi = 'xx';                                                                          . %         hemi = 'xx';
733 %         zcmd=sprintf('freeview -v $SUBJECTS_DIR/%s/mri/T1.mgz -f $SUBJECTS_DIR                . %         zcmd=sprintf('freeview -v $SUBJECTS_DIR/
734 %            fs_subjID, fs_subjID);                                                             . %            fs_subjID, fs_subjID);
735 %         system(zcmd);                                                                         . %         system(zcmd);
736    end                                                                                          x     end
737                                                                                                 .
738    if do_freesurfer3                                                                            x     if do_freesurfer3
739        recon3cmd=sprintf('recon-all -subjid %s -T2 %s -T2pial -autorecon3 -paral                x         recon3cmd=sprintf('recon-all -subjid %s -T
740            fs_subjID, t2_acpc_dc_rest, n_cores);                                                x             fs_subjID, t2_acpc_dc_rest);
741        fprintf('%s\n',recon3cmd);                                                               x         fprintf('%s\n',recon3cmd);
742        system(recon3cmd);                                                                       x         system(recon3cmd);
743    end                                                                                          x     end
744                                                                                                 .
745     %% segmentation and brain mask based on freesurfer output                                  .     %% segmentation and brain mask based on freesu
746     fsnatmask_path = fullfile(mask_path,'native','fs');                                         .     fsnatmask_path = fullfile(mask_path,'native',
                                                                                                          [178 unmodified lines hidden]
925             fprintf('%s\n',zcmd)                                                                .             fprintf('%s\n',zcmd)
926             system(zcmd,'-echo')                                                                .             system(zcmd,'-echo')
927             %QA                                                                                 .             %QA
928   %          if n_vp==1                                                                         x             if n_vp==1
929   %              sl = [t1_acpc_dc_rest_fsbrain ' ' bin_out];                                    x                 sl = [t1_acpc_dc_rest_fsbrain ' '
930   %          else                                                                               x             else
931   %              sl = [sl ' ' t1_acpc_dc_rest_fsbrain ' ' bin_out];                             x                 sl = [sl ' ' t1_acpc_dc_rest_fsbra
932   %          end                                                                                x             end
933   %          if n_vp==length(vps)                                                               x             if n_vp==length(vps)
934   %              cd(qa_path);                                                                   x                 cd(qa_path);
935   %              slice = sprintf('slicesdir -o %s', sl);                                        x                 slice = sprintf('slicesdir -o %s',
936   %              fprintf('%s\n', slice);                                                        x                 fprintf('%s\n', slice);
937   %              system(slice, '-echo');                                                        x                 system(slice, '-echo');
938   %              movefile(fullfile(qa_path,'slicesdir'), fullfile(qa_path,sprint                x                 movefile(fullfile(qa_path,'slicesd
939   %          end                                                                                x             end
940         end                                                                                     .         end
941                                                                                                 .
942         %create total_gm mask in 2mm native and mni space                                       .         %create total_gm mask in 2mm native and mn
                                                                                                          [10 unmodified lines hidden]
953         %combine total gm and wm in 2mm mni space                                               .         %combine total gm and wm in 2mm mni space
954         allm = fullfile(fsmni2mmmask_path, 'allm.nii.gz');                                      .         allm = fullfile(fsmni2mmmask_path, 'allm.n
955         totgm = fullfile(fsmni2mmmask_path, 'total_gm.nii.gz');                                 .         totgm = fullfile(fsmni2mmmask_path, 'total
956         %wm = fullfile(fsmni2mmmask_path, 'wm_aseg.nii.gz');                                    x         wm = fullfile(fsmni2mmmask_path, 'wm_aseg
957         wm = fullfile(fsmni2mmmask_path, 'wm.nii.gz'); % Modified by me !! wm_as                <
958         zcmd = sprintf('fslmaths %s -add %s -bin %s', ...                                       .         zcmd = sprintf('fslmaths %s -add %s -bin %
959             totgm, wm, allm);                                                                   .             totgm, wm, allm);
960         fprintf('%s\n',zcmd)                                                                    .         fprintf('%s\n',zcmd)
961         system(zcmd,'-echo')                                                                    .         system(zcmd,'-echo')
962     end                                                                                         .     end
963 end                                                                                             . end
964                                                                                                 .
965                                                                                                 <
966                                                                                                 <
967 %% create overlap mask for allm                                                                . %% create overlap mask for allm
968 if do_overlap                                                                                   . if do_overlap
969     over_path = fullfile(nii_path,'overlap_masks');                                             .     over_path = fullfile(nii_path,'overlap_masks')
                                                                                                          [7 unmodified lines hidden]
977         if n_vp == 1                                                                            .         if n_vp == 1
978             addmasks = vpmask;                                                                  .             addmasks = vpmask;
979         else                                                                                    .         else
980             addmasks = [addmasks ' -add ' vpmask];                                              x             addmasks = [addmasks30 ' -add ' vpmask
981         end                                                                                     .         end
982     end                                                                                         .     end
983     over_out = fullfile(over_path, '30overlap_allm_ero1vox.nii.gz');                            .     over_out = fullfile(over_path, '30overlap_allm
                                                                                                          [8 unmodified lines hidden]
```

Number of matching lines: 798

Number of unmatched lines in left file: 193

Number of unmatched lines in right file: 109