**New DCE GUI Options – V2.2**

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1. **SubSampling** – Allowing to sub-sample the original data (use lower temporal resolution)

Default: 1. DO NOT CHANGE (used for high resolution data). 3= for HTR change from 2sec to 6sec

1. **nVolsToRemoveFromEnd** – Cut the last volumes of the test (sometimes the last volumes are distorted). Default: 0
2. **SubSecondResolution** – Number of sub seconds parts for super resolution ("2" means 1/2 of a second). Default: 2
3. **MinFirstBolusStd** – The minimum width of the bolus (standard deviation of the Gaussian that represents the first bolus). Default: 2
4. **EM\_Num\_Of\_Iterations** – Number of iterations for the Expected Minimization algorithm which finds the optimal AIF and parameters. ). Default: 5. (Currently not used, the algorithm uses Murase)
5. **FMS\_TolFun** – Function Minimum Search's (Matlab's) parameter. Tolerate Function – minimal improvement for continuing the search. Default:
6. **FMS\_MaxFunEvals** – Number of possibilities for the F Mean Search at each step to change. Can think of it as in the case of 2-D vector f(**X**) ( How many 2-D points to move to from the current one). Default: 10000
7. **FMS\_MaxIter** – Maximal Number of iterations for FMS algorithm. Default: 10000
8. **MaxTDif\_ForAIFSearch** – The possible shift in time for the AIF of the representing voxels (in seconds). Default: 3
9. **MaxTDif\_ForWholeVOI** – Same as MaxTDif\_ForAIFSearch, just when allowing shifting in time for all voxels in VOI (and not just representing voxels). Default: 6
10. **Rep\_MaxAroundBolus** – Number of clusters around the bolus (for finding representing voxels). Default: 10
11. **Rep\_RatioToEnd** – Number of clusters around the end of the test (for finding representing voxels). Default: 10
12. **Rep\_nPerSet** – Number of total clusters will be MaxAroundBolus \*Rep\_RatioToEnd. This option will determine how many representing voxels we will choose from each cluster. Default: 1
13. **MakeNoBATManualArtAnalysis** – If "1" and manualArt.nii exists, take the arteries from that file, take their average and make a regular calculation (we have AIF so we simply use Murase to get the PK parameters) without the possibility to shift BAT. Default: 0
14. **MakeBATManualArtAnalysis** – If "1" and manualArt.nii exists, take the arteries from that file, calculate the parameters using F Min Search on the picked arteries (instead of finding representative) and allow the possibility to shift BAT. Default: 0
15. **MakeBATAutoArtAnalysis** – The default mode of choosing the arteries automatically. Default: 1
16. Extracted FAs – Correct the flip angles of the scan (we assume there is an error).Default: 1
17. IncludingMainInT1 - Default: 1
18. **UsingN3T1 -** Default: 1
19. **TimeMultiplier –**Default: 1
20. **Use\_Single\_M0 –** Enable calculating T1 using a single angel.Default: 0
21. **Calc\_Gains\_Diff –** Enable/disable gains calculation made by Gilad. Default: 1
22. **Mask\_Thresh –** Set threshold for masking (the general mask of where to work).  
    For positive values (0-1) uses SPM for masking.

For negative values (0 to -1) uses BET for masking.

The absolute value is passed to the SPM or BET.

Default: 0.5 (i.e., positive, uses SPM and the thresholds with 0.5).

1. **MainCoregistration** - Choose between 1-realignment, 0-no motion correction and >=2 – coregister to that volume. Default: 1
2. **CoregRelaxToMain** - Do coregistration between Relaxometry and main. Default: 1

**Relaxometry coregistration - Use the list box:**

Can coregister to DCEMean ('Mean 4D'), use no coregistration (' No coreg’) or coregister to the median angle.

Anyway will coregister the T1 map o DCE mean.

**To force AIF shape (parameters) calculated before:**

***InspectedAIFParams.mat***

**To add reference files insert NIFTI files named:**

***RefVp\_WM\_830.nii***

***RefT1\_WM\_830.nii***

***Manual\_BrainMask.nii***

For artery selection, either

**InspectedRepVox.nii** - Takes exactly what's there, or

**ManualArtMask.nii** - Looks for arteries only inside that mask.

**TR correction**

See Report, **TRsBySet** (reports on the se. info)

**Supplementary – Eval DCE param**

**FastVpMap.m**

עושה מקסימום באיזור הבולוס, ומוציא מפת FastVp.nii בתוך הספריה AutoArtBAT של הנבדק

צריך – להיכנס לסקריפט ולשנות את שם הנבדק

**NormalizeByVeinsWithReps.m**

לגבי הנרמול ע"פ סורבון,לפני הרצה צריך ליצור קובץ **Veins.nii** עם סימון של כמה ורידים. הוא ייקח את זה עם השטח הכי גדול מתחת לגרף וינרמל לפיו. הנרמול:

1) לפי כל אורך הזמן, יוצר את הקבצים KtransFinalNS, VpFinalNS

2) לפי +- שש שניות מהבולוס, יוצר אותם שמות עם B בסוף

הוא יוצר תמונה, עם הנרמול של גים בכחול, סורבון במג'נטה וסורבוןB באדום, בכותרת יש את קבועי הנרמול החדשים כאשר ערך קרוב ל - 1 = דימיון גבוהה לגים

**DCE – Perfusion [Guy]**

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**>>** **Test\_On\_Real\_Data\_Script**

Change:

Subject\_name = 'ReYe';

ShortName = 'ReYe\_20140615';

Subject\_Path = '\\fmri-t9\users\Moran\DCE\HTR\_STROKE\...\Study20140615\_114415\';

WM\_mask\_absolute\_path = [Subject\_Path '**RefT1\_WM\_830.nii**'];

Art\_Mask = [Subject\_Path '**InspectedRepVox.nii**'];

After\_CTC\_mat = [Subject\_Path '**AfterCTC.mat**'];

**RUN ICA for AIF selection**

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DemoForMoranCTC.m