## Set-up of the fitModeldata yaml file

Information to process the data in the study is provided to the fitting program by a fitmodelData yaml file. Examples of these files can be found in the ***fitModelDataYAMLfiles*** directory for fitting single data sets and in the ***examples/fitModelDataYAMLfiles*** directory for fitting data in a study directory structure.

* fitStudyDataEPGAzz
* fitStudyDataFatEPG2
* fitStudyDataMuscleEPG1

The fitting program is capable of fitting a number of different models to the T2 image data based on the model structure found in the Azzabou paper. Muscle, fat and phantom data can be fit by the program using a simple exponential decay model or an extended phase graph model (EPG). This document will focus on fitting the T2 image data using the EPG model.

The example taken will be to fit the T2 image data using the **fitStudyDataEPGAzzAnalyze** yaml file.

The contents of the file are given below. Line numbers have been added to help with the explanation of the file, but the user should be aware that the sequential order of the different groups within the file is not important. The example YAML file has been set up to be used on the study directory structure defined earlier. The YAML input file has been designed to be used on data in a study directory structure or on individual files which have been defined within the file. In the following paragraphs the different parts of the file will be discussed.

1 fitModel: AzzEPG  
2   
3 # use a relative directory path when fitting data in study directory structure  
4 # when fitting individual files it can be set to a complete path  
5   
6 resultsDir: T2/results/muscle/AzzEPG  
7   
8 # Can only be used when fitting data in study directory structure  
9 # must be set as a relative directory path  
10   
11 fatResultsDir: T2/results/fat/fatEPG2  
12 setParamValsIndividually: True  
13   
14 # EPGAZZ model parameters to update  
15 # Always include the echo value  
16   
17 ParamVals:  
18 echo:  
19 value: 8  
20 min: 0  
21 max: 10  
22 vary: False  
23   
24 paramsModelName:  
25 AzzEPG: fitModelParameterJsonFiles/azz\_fatmuscle\_epg\_model\_params.json  
26 fatEPG2: fitModelParameterJsonFiles/two\_fat\_epg2\_model\_params.json  
27 fatEPG1: fitModelParameterJsonFiles/one\_fat\_epg1\_model\_params.json  
28 muscleEPG1: fitModelParameterJsonFiles/one\_fatmuscle\_epg1\_model\_params.json  
29 muscleEPG2 : fitModelParameterJsonFiles/two\_fatmuscle\_epg2\_model\_params.json  
30 phantomEPG1: fitModelParameterJsonFiles/oneParamEPGphantom\_model\_params.json  
31 phantomEPG2: fitModelParameterJsonFiles/twoParamEPGphantom\_model\_params.json  
32 Azzabou: fitModelParameterJsonFiles/azz\_params.json  
33   
34 roiFitModel:  
35 AzzEPG: muscle  
36 fatEPG2: fat  
37 fatEPG1: fat  
38 muscleEPG1: muscle  
39 muscleEPG2 : muscle  
40 phantomEPG1: phantom  
41 phantomEPG2: phantom  
42 Azzabou: muscle  
43   
44 fitSubject: [HC-001]  
45 fitSession: [sess-1]  
46 fitImagedRegions: [forearm]  
47 fitSlices: [1,2,3]  
48   
49 useRoiOutline: False  
50   
51 roiAuthorPreference: [EH]  
52 imageDataFormat: Analyze  
53   
54 #roisIndividual: simpleModelData/DMD\_001\_FOREARM\_RoiSet.zip  
55   
56 roiOutline: simpleModelData/EH\_DMDT\_001\_1\_foreArm\_outline.zip  
57   
58 analyzeHdr: simpleModelData/WIP\_Forearm\_T2\_CLEAR.hdr  
59 analyzeImg: simpleModelData/WIP\_Forearm\_T2\_CLEAR.img  
60   
61 # minimum step size across profile = 1  
62 # maximum step size across profile = 19  
63   
64 pulseProfileSteps: 10  
65   
66 # pulse profile should correspond to the protocol that was used to collect  
67 # the data  
68   
69 p90pulseProfile: simpleModelData/flip\_angle90\_clairewood.mat  
70 p180pulseProfile: simpleModelData/flip\_angle180\_clairewood.mat  
71   
72 # integration factor, might need to be altered based on value of  
73 # pulseProfileSteps and fit model being used  
74   
75 dx: 0.45