CSiApo Format Converter (CFC) Help and Manual

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Introduction

CSiApo Format Converter (CFC) is a module composed of two Matlab scripts that are used to convert MRSI binary files exported with CSiApo[1] software, into one of the supported file types of the *Dynamic MRSI Processing Module* (DMPM, available at http://gabrmn.uab.es/dmpm)[2].

CSiApo Format Converter (CFC) description

CSiApo exported files have the following format: Ncol*Nrow*Np matrix of complex data (Ncol: number of columns, Nrow: number of rows, and Np: number of points), so that it can be seen as a Ncol*Nrow*2*Np matrix (each complex data is composed by 2 float32 values).

CFC scripts can convert the binary file format described above into one of the following formats:

- CFC script to convert into 3DiCSi[3] format (**CFC_script_ 3DiCSi.m**):
  Data pre-processed with 3D Interactive Chemical Shift Imaging v1.9.10 (3DiCSI). It has the following structure: first row for the name of the set, line-break, Number of voxels: (a number), line-break, Number of points per voxel: (a number), line-break, Voxel Index: (with the information of the location of each voxel in a map, line-break, and then two columns with Real and Imaginary data.
- CFC script to convert into DMPM format (**CFC_script_DMPM.m**):
  Data processed and exported using the Dynamic MRSI Processing Module (DMPM). It has the following structure: first row for the name of the set, line-break, Number of voxels: (a number), line-break, Number of points per voxel: (a number), line-break, Voxel Index: (with the information of the location of each voxel in a map, line-break, Is labelled: (Yes/No), line-break, and then the matrix of frequencies having one spectrum per row. If "Is labelled" is equal to Yes, at the end of each row, the class label can be found for the corresponding spectrum.

When executing these scripts (**CFC_script_ 3DiCSi.m** and **CFC_script_ DMPM.m**) in Matlab, an open file window will be opened to allow users to look for the binary file, select it, and open it. Then, at the end of the conversion process, a save file window will be opened to allow users to indicate the desired name and path of the converted file.

Important note

Be aware that the aligning methods for MRSI acquisitions implemented in CSiApo and DMPM are not the same, so slightly different results might be obtained if the user decides to use one software or the other.

References

[1] Le Fur Y, Nicoli F, Guye M, Confort-Gouny S, Cozzone PJ, Kober F: **Grid-free interactive and automated data processing for MR chemical shift imaging data**. MAGMA. 2010 Feb;23(1):23-30. Epub 2009 Nov 3.

[2] DMPM [Available at: http://gabrmn.uab.es/dmpm]. *2009-2010: GABRMN.*

[3] Zhao Q, Patriotis P, Arias-Mendoza F, Stoyanova R, Brown TR: **3D Interactive Chemical Shift Imaging: A Comprehensive Software Program for Data Analysis and Quantification** In: *48th ENC Experimental Nuclear Magnetic Resonance Conference: 2007*; 2007. [Available at: http://software.incf.org/software/3d-interactive-chemical-shift-imaging]