SOFA Toolbox for Matlab/Octave

(previously SOFA API_MO)

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**This document contains preliminary remarks on the
SOFA Toolbox version 2.1.**

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1.   STARTING THE TOOLBOX

SOFAstart compiles the conventions (stored in directory conventions as CSV files) to Matlab files and starts the Toolbox. Essential subdirectories are added to Matlab/Octave paths.

More information in readme.txt or help SOFAstart.

2.   DEMONSTRATIONS

In the directory "demos", some demonstrations of the functionality of the Toolbox are provided. This is the first place to get familiar with the structure of the Toolbox.

Note that for the demonstration of conversion functions, you will most probably need to download some non-SOFA HRTF files first. See readme.txt files in the respective HRTF directories of the corresponding non-SOFA format.

3.   STRUCTURE OF THE SOFA OBJECT

All the SOFA information is stored in the a variable which we call SOFA object here. Such an object is, for example, returned by the function SOFAload. In that object:

- "GLOBAL_" are all global attributes. Use prefix GLOBAL_ to add your global attributes.

- Variables are stored with their names as they are.

- An attribute Y of a variable X is stored as X_Y.

- "Data." is a separate structure containing the SOFA data.

- "PRIVATE" is a structure with private data for application use. Here you can store your private variables which belong to the SOFA object. Private variables won't be saved when saving the object as a SOFA file.

- "API" contains internal variables of the Toolbox API. Do not modify them, use SOFAupdateDimensions() to update them according to your data. These variables are useful for handling the SOFA data:

  - API.N, API.M, etc (all SOFA dimensions): store the size of a dimension

  - API.Dimensions: dimensions of SOFA variables

- Use SOFAaddVariable() to add a new variable.

4.   FURTHER RESOURCES

Further resources can be found:

- SOFAtoolbox/readme.txt provides a short description of the SOFAtoolbox.

- SOFAtoolbox/history.txt provides the history of the development and release notes.

- data/SOFA stores SOFA files. Some of these files are mirrored under http://sofacoustics.org/data.

- data/SOFA/sofatoolbox_test: here, the automatically created SOFA files will be saved for testing purposes.

- data/* (except data/SOFA): directories containing HRTF/IR files stored in other formats than SOFA.

- https://www.sofaconventions.org provides the most recent information on SOFA.