

Visual3D Tutorial: Marker-Markerless Comparison

** This tutorial has been updated to use the [Manage_File_Merge](#) command. Previous versions used `Manage_Theia3D_Processing`, however this command is no longer recommended since [Manage_File_Merge](#) was updated to be used for file types other than just from Theia3D. This command can merge Theia3D output along with other C3D marker based data files.**

This tutorial demonstrates the merging of Theia3D output c3d files and synchronized c3d files with marker based data. This method can be used to simultaneously build and compare models for data collected using synchronized markerless and marker based motion capture.

Demo Files

To begin, download the [zip file](#) containing folder paths and files for this tutorial. This folder contains separate CMZs for both the markerless and marker based captures that will be merged.

Merge Theia3D Files and Marker based files

Once merged, the Theia3D signals will be assigned a prefix ML: and a subject tag ML while the marker based signals will be assigned a prefix M: and a subject tag M. The pair of synchronized files will be merged into one file. The ground reaction force will be assigned to both models (there is a little inside trick here) and difference signals and metrics will be generated and reported.

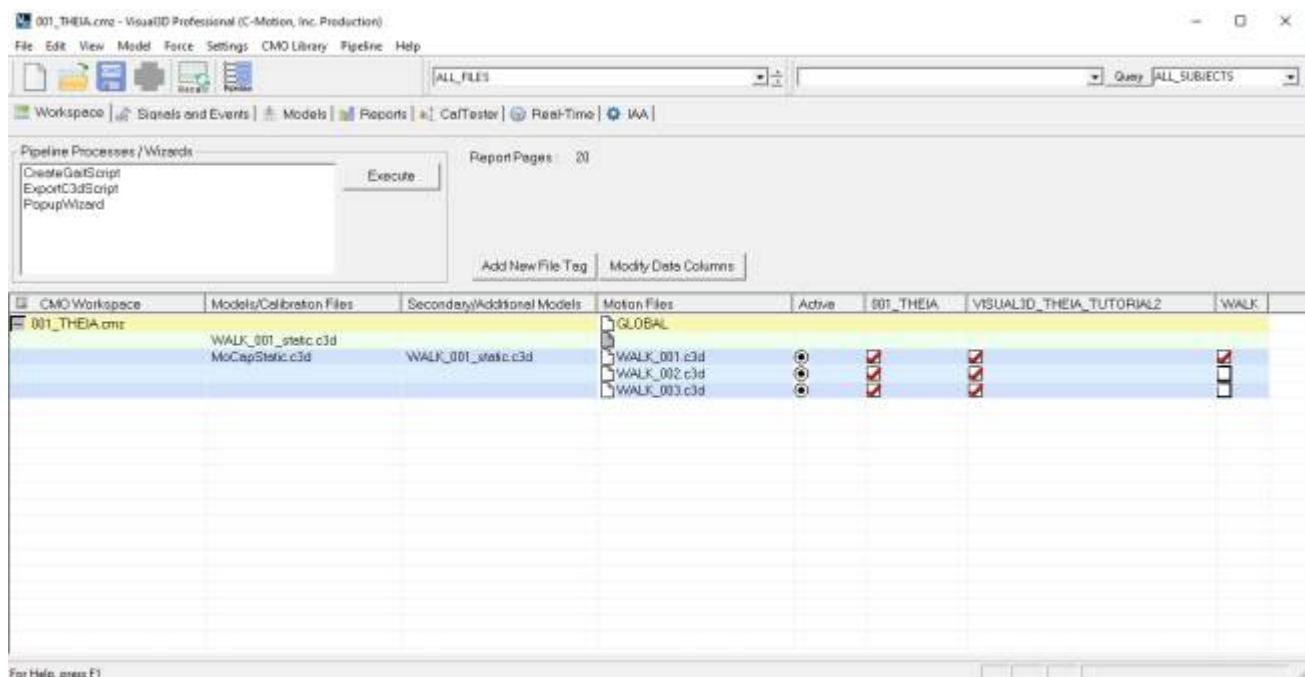
The following Visual3D command can be used to merge the two CMZs together:

```
Manage_File_Merge
/ROOT_FOLDER=...\Visual3D_Theia_Tutorial2\
! /HMX_INDEX_MASK=
! /USE_HMX_INDEX=FALSE
! /ACTION=
! /TAGS=ACTION
! /IMPORT_ANALOG_FILES=FALSE
! /MERGE_PRIMARY_FILES=FALSE
/MERGE_PRIMARY_AND_OTHER_FILES=TRUE
! /MERGE_EVENT_LABELS=FALSE
/PRIMARY_SESSION_FOLDER=*001_THEIA
! /PRIMARY_FILE_MASK=*.c3d
! /PRIMARY_FILE_MAS_FOR_MODEL=
/THEIA3D_PREFIX=ML:
/THEIA3D_SUBJECT_TAG=ML
/PRIMARY_COLOR=Black
! /PRIMARY_SEX=UNKNOWN
! /CREATE_MODEL_FOR_EACH_C3D_FILE=FALSE
/OTHER_SESSION_FOLDER=*001_QTM
/OTHER_FILE_MASK=*.c3d
/OTHER_MODEL_MASK=*.c3d
/OTHER_MODEL_TEMPLATE_MASK=*.mdh
/OTHER_PREFIX=M:
```

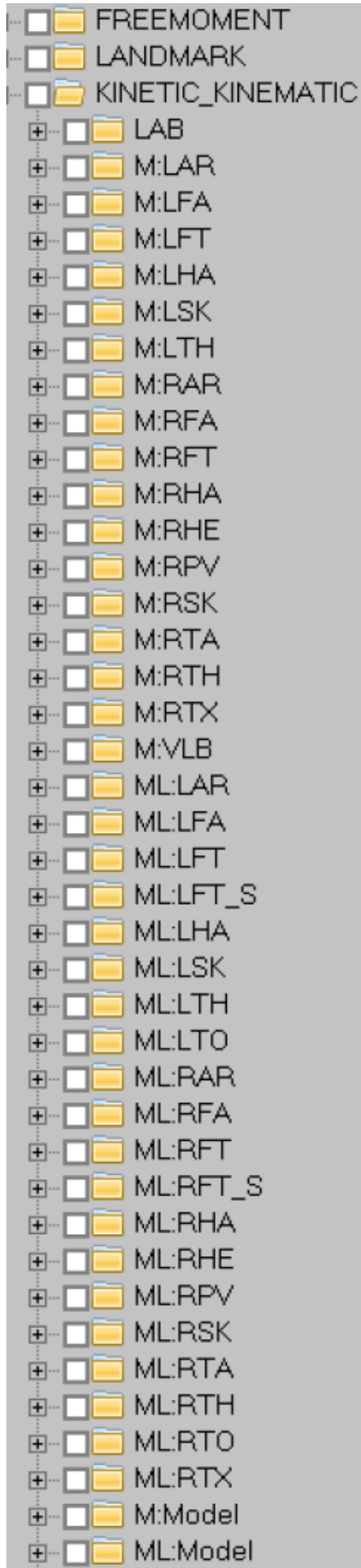
```

/OTHER_SUBJECT_TAG=M
/OTHER_COLOR=Black
! /NUMBER_OF_SESSION_FILES_ALLOWED=
! /SAVE_DEFAULT_CMZ_FILES=TRUE
! /DEFAULT_CMZ_NAME=<SESSION>
! /OPEN_CMZ_LIBRARY=FALSE
! /VIRTUAL_LAB=
/INPUT_DATA_FOLDER_PRIMARY=TRIAL
/INPUT_DATA_FOLDER_SECONDARY=ACTION
/INPUT_STATIC_DATA_FOLDER=SESSION
! /KINETIC_THORAX=RTA
! /ANALOG_FILTER_CUTOFF=12
! /TARGET_FILTER_CUTOFF=12
/FP_AUTO_BASELINE=Treadmill_Foreaft
! /VISUAL3D_PIPELINE_POST_MERGE=
! /VISUAL3D_PIPELINE_PREMERGE=
;

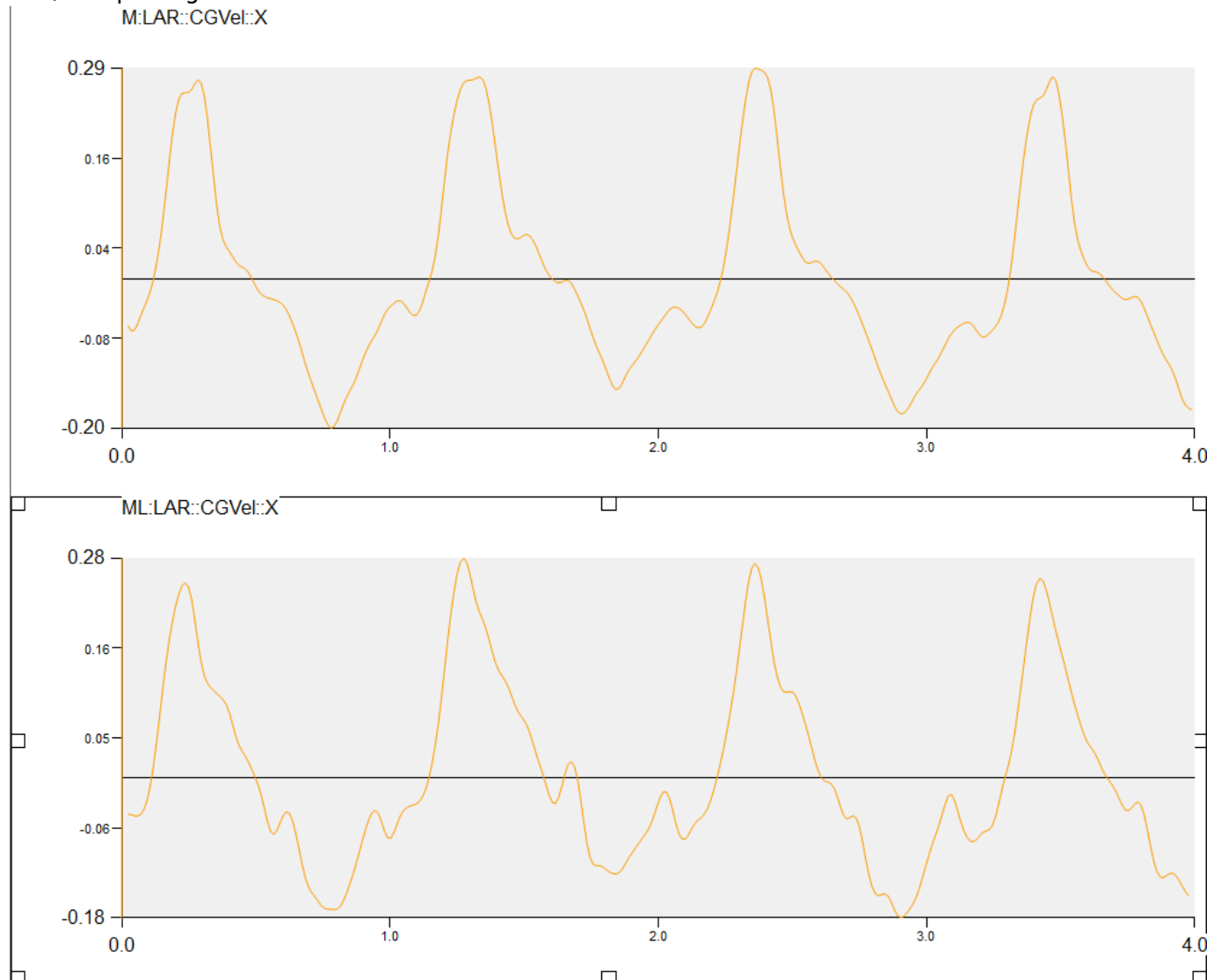
```



The resulting file contains 3 merged c3d files and 2 models. The corresponding signals for each model can be found in the data tree with their respective prefixes added:



Once the files have been merged, the differences in signals can be viewed using Visual3D's graphing and/or reporting functions:



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