



Altair

HyperWorks

Altair MotionView 2019 Tutorials

MV-4020: Solver Neutral Modeling

altairhyperworks.com

MV-4020: Solver Neutral Modeling

MotionView provides a solver-neutral pre- and post- processing environment to facilitate working with other MBD solvers.

MotionView has the following solver interfaces:

- MotionSolve
- ADAMS
- ABAQUS


MDL models can be exported to any of these solvers for analysis:

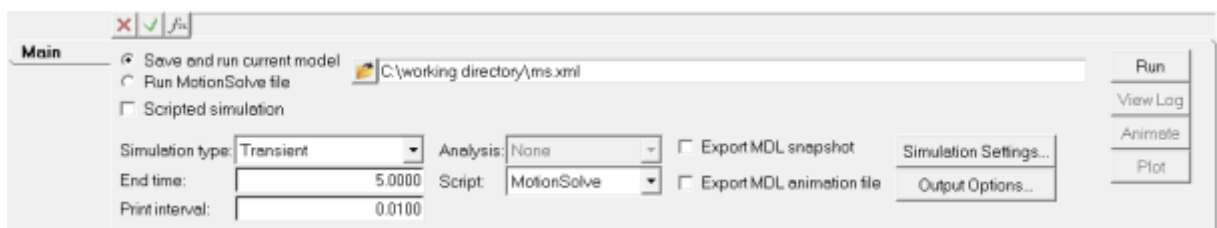
- User can change the solver mode and then export the model to the particular solver.
- User can register a script to run a solver from within MotionView. Refer to the Tip and Trick, "Start an ADAMS run from within MotionView" available on Altair's website.
- If the user needs to add any statement specific to the solver, Templex template can be used in the model. Refer to tutorial *MV-4010* for some more details about the Templex template.
- The results from these solvers can be post processed in MotionView.

Copy the folder named `solver_neutral`, located in the `mbd_modeling\externalcodes` folder, to your `<working directory>`.

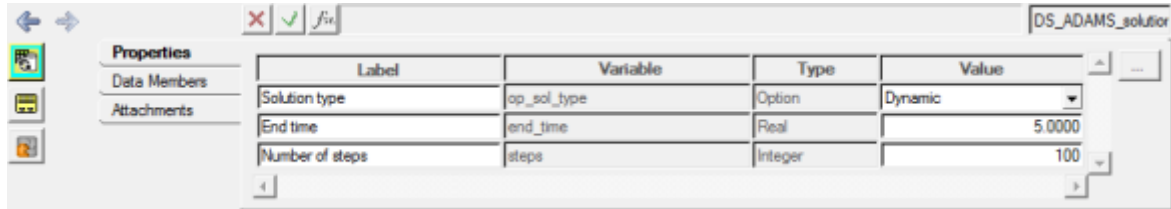
Exercise


Step 1: Loading a Solver-Neutral Model and Running Different Solvers.

1. Start a new MotionView session.
2. Copy the folder named `solver_neutral`, located in the `mbd_modeling\externalcodes` folder, to your `<working directory>`.
3. Load the file `model.mdl`.
4. From the **SolverMode** menu, confirm that **MotionSolve** is selected.
5. Click the **RUN** icon, , on the **Model-Main** toolbar.
6. From the **Main** tab, specify your output filename as `<working directory>\ms.xml`.



7. Select the **Simulation type: Transient**.
8. Click **Run**.
MotionSolve is launched and completes the run.
9. From the **SolverMode** menu, select **ADAMS**.
10. From the **Project Browser**, under the **Data Sets** folder select **Solution Options**.



11. Review the **Solution Options** dataset.
12. You can enter the simulation parameters for the ADAMS solver into this table.
13. Click the **RUN** icon, , on the toolbar.
14. Specify the output filename as <working directory>\adams.adm.





! Do not complete the following steps without connecting the ADAMS solver to the **RUN** button.

For this tutorial, you can assume the ADAMS run is complete and go to **Step 2: Comparing Solver Animations**.


15. From the **Script** combo box, select the script **ADAMS Executable**.
16. Click the **RUN** button to start the simulation.

The ADAMS solver is launched and completes the run.


Step 2: Comparing Solver Animations.

1. Click the **Add Page** icon, , on the **Page Controls** toolbar to add a new page to your session.
2. Select **HyperView**  from the **Select Application** drop-down menu.
3. Click the **Page Layout**, , icon on the toolbar and select the three horizontal windows layout, .
4. Load the following model and results files into the three windows:

	Window 1	Window 2
Model	ms.h3d	adams.gra
Results	ms.h3d	adams.gra

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5. Click the **Start/Pause Animation** icon, , on the **Animation** toolbar to animate the model.

Notice that if the same solver parameters are chosen, the results from different solvers are in-sync.

6. Click the **Start/Pause Animation** icon again, , to stop/pause the animation.