Knowledge Base

Abaqus/CAE plug-in to save RMISES results to the output database

| Portfolio / Domain: | SIMULIA Abaqus Unified FEA / SIMULIA Abaqus Unified FEA |
| Product: | SIMULIA Abaqus/CAE |

QUESTION

I would like to save RMISES results in the output database. Is there any way I can achieve this in Abaqus/Viewer?

ANSWER

(The following applies to Version 6.11 and higher)

An Abaqus/CAE plug-in for this purpose is attached below. By default RMISES output is calculated on the fly each time the output database is opened in Abaqus/Viewer. To save these values use the attached plug-in. The saved RMISES values can be operated on using the "Create Field Output" function in Abaqus/Viewer.

This Python script will read the RMISES values from a source output database (ODB) file (readOdb) and write the values to a target ODB file (writeODB). The target ODB file should be created by performing an Abaqus datacheck on the input file used to create the source ODB.

Installation

To install the plug-in, save the attached archive file to one of the following directories:

abaqus_dir\abaqus_plugins where *abaqus_dir* is the Abaqus parent directory

home_dir\abaqus_plugins where *home_dir* is your home directory

current_dir\abaqus_plugins where *current_dir* is the current directory

Note that if the abaqus_plugins directory does not exist in the desired path, it must be created. The *plugin_dir* directory can also be used, where *plugin_dir* is a directory specified in the abaqus_v6.env file by the environment variable **plugin_central_dir**. You can store plug-ins in a central location that can be accessed by all users at your site if the directory to which **plugin_central_dir** refers is mounted on a file system that all users can access. For example,
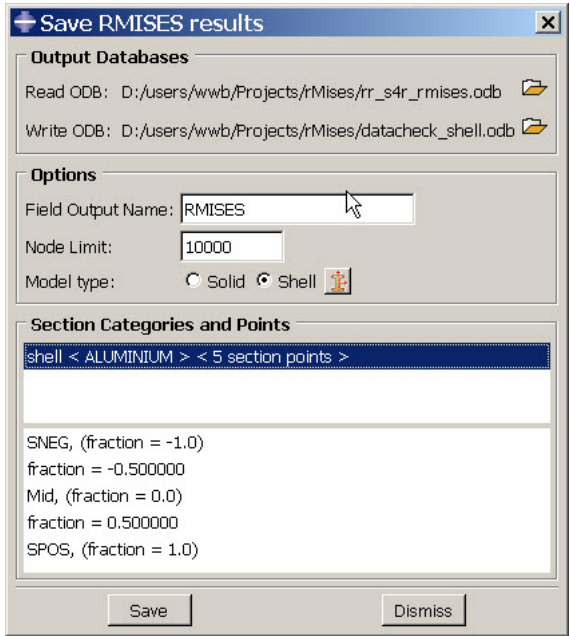
plugin_central_dir = r'\\fileServer\sharedDirectory'

On Windows platforms, right click on the archive files and select **WinZip → Extract to here**. On Linux platforms, type **unzip RMISES.zip** at the command prompt. Folders named abq_rMises and a file named rMises_plugin.py will be extracted.

Note that the plug-in will not function properly if this procedure is not followed.

Usage

1. In the Visualization module of Abaqus/CAE or in Abaqus/Viewer Select **Plug-ins → Tools → Save RMISES...** to receive the following dialog:

2. Select the read and write output database. The write output database should be obtained by performing an Abaqus datacheck on the input file used to create the read output database.

3. Specify the field output name to be created in the write output database.

4. Specify a node limit. The code will process this many nodes at a time to improve the performance.

5. Choose appropriate Model type: Solid or Shell. If the model type is Shell then section categories and section points will be listed below. Otherwise, the tool will extract the XY data of RMISES output and write the values to the nodal field output.

6. Choose a section category and a section point. The tool will extract the XY data of RMISES output at the chosen section point and write the values to the nodal field output.

Notes

1. RMISES results are not available for beam elements.

2. The plug-in may have performance issues for large models.

Revision History

31 Dec 12	Release 1.1-1
29 Jul 13	Deleted the XY objects in Abaqus/Viewer.
30 Nov 15	Fixed a bug about "data" being undefined

Disclaimer

The attachments to this article are subject to certain usage conditions. Please click here for details.

KEYWORDS	random, psd 4994

ATTACHMENT	answer_4994_picture1.jpg RMISES.zip

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