
Changes and Corrections in FEMtools 3.5.3

FEMtools 3.5.3 is a maintenance release that provides fixes to issues reported after the previous release and provides various improvements and corrections to the interface programs, GUI, commands and API functions. Support for ANSYS 14 interface files has been added.

Installation, Licensing and Configuration

- This maintenance release is available for Windows 32-bit and 64-bit, Linux 64-bit and Mac OS.
- The v3.5.3 release integrates all patches previously released for v3.5.x.
- The package manager now generates a log file and makes a copy of the .bas, .eba, .xml and .ini files that are overwritten. The log file and file copies are stored in the `./packages/` folder of the FEMtools installation.
- The package manager now remembers the value of 'Do not show this dialog again'-setting even if the dialog box is closed with the **Cancel** button.
- The packages in the package manager are now displayed in alphabetical order.
- The package manager now checks whether the user has writing permissions in the FEMtools folder prior to installing the add-on.

Documentation and Examples

- Documentation of the **EXAMINE EULER** command has been corrected.
- The documentation of the **Ft_PutFRF** function has been improved.
- The **commands DEFINE CHANNEL, APPLY DOFRELATIONS, DEFINE DOFRELATION, EXTRACT DOFRELATIONS** are now documented in the *FEMtools Command Reference*.
- A number of API variables that were not documented have been added to the API reference: "correlation", "parameter", and "response".

FEMtools Framework

- The case-sensitivity of the **EXTRACT VARIABLE** command has been fixed: the **VARIABLE** complement value is no longer case sensitive.
- The item selection is now updated in the graphics windows when the selection is modified with the **Node Selection, Element Selection, Point Selection** or **Point Connectivity Selection** dialog boxes.
- The current working folder is now used as default folder for the HTML reporter. The **Finish** button is now disabled until all the required information has been entered. The file 'report_template.html' is now used as default template. This file is stored in the XML path.
- The **MODIFY FRF** command did not support rotational DOFs in the console output although the command was executed correctly. This issue has been fixed.
- Modifying the FRF definition of test FRFs using the GUI cleared the FRF data. This has been fixed. As the range of test FRFs cannot be modified, the range is no longer shown in the **Edit FRF** dialog box. The data of FEA FRFs is still cleared when the definition is modified, this is done to ensure the consistency between the FRF definition and the FRF curves.

- The 'Tolerance for grid locations' entry in the **Settings** dialog box has been renamed to 'Tolerance for Graphical Picking'.
- New styles settings files were added: jet.sty, warm.sty, bone.sty and qc.sty. These style settings are the similar to default.sty but use a different colormap for mesh and matrix contours.
- The style settings file examples.sty has been replaced by report.sty. This style is similar to default.sty but uses white backgrounds for all the graphics. The fill color of the FE model is also slightly lighter to improve readability of the plot when printed.
- The setting matrix.banded has been added to the factory.ini and all the style settings files.
- The setting mesh.contour.banded has been added to all the style settings files.
- The color of the FE model in link plots (mesh.colors.fem.link) and pair plots (mesh.colors.fem.pair) has been set to the same color used in the FEM plots (mesh.colors.fem.default).
- The **STYLE** command now also processes the matrix.banded and mesh.contour.banded settings.
- The automatic extension of the filename when no file extension is provided has been restored for similar behavior as previous versions.
- Improvement of the colorscale annotation in mesh plots.
- Right-docked widgets (panels) now take ownership of the bottom right corner.
- Improvement of the visualization of contour meshes that comprise NaN values.
- A new utility script, frfcleanup.bas, has been added. It removes all the test FRFs that refer to points that do not exist.

ABAQUS FEA Data Interface and Driver

- The orientation of elbow elements is now imported and exported.

ANSYS FEA Data Interface and Driver

- The ANSYS interface now supports the blocked data structure.
- Support for ANSYS 14 has been added.

NASTRAN FEA Data Interface and Driver

- The OUG1 card is now supported in the POST, -1, op2. The OUG1 card replaces the OUGV1 card.

Universal File FEA Data Interface and Driver

- The **RUFTEST** command did not read static shapes; upper and lower residuals are stored as static shapes. This issue has been fixed and the **RUFTEST** command now processes static shapes in the same way as the internal UFF interface.
- A folder with interfacing examples was added to the examples folder. This folder contains examples that show how to combine FRFs and/or modes that are stored in multiple universal files.
- The FRF type 9 (Excitation Force) has been added to the Universal File interface.
- The element subtype was left undefined. This has been fixed.

Dynamic Analysis

- The FRF computation using the direct approach can now be aborted by clicking on the **Stop** button (in the main toolbar).
- The **Modes Analysis** dialog box is now a modal dialog box.

Correlation Analysis

- Repeatedly clicking the **Analyze** button of the **MAC Contribution Analysis** dialog box in a short time span does no longer cause a shutdown of FEMtools.
- The MCA MAC was reset to the initial MAC after the **MAC Contribution Analysis** dialog box was closed. This has been fixed.
- The AutoPOC FEM and AutoPOC Test computation were obsolete and have been removed.
- The default value of the **Use Normalized Mode Shapes** check box in the **Modal Orthogonality (AutoEVO) – FEA** dialog box has been set to 'off'. A **Normalize** button was added to make the normalization of the mode shapes easier.
- The default setting of the **NORMALIZED** complement of the **EXAMINE EVO** command has been changed to **OFF** (used to be **ON**).

Model Updating

- It is now possible to manually define the values of the mass property responses in the **Create Response** dialog box; previous FEMtools version always used the FE values of the mass properties. The value of the mass properties can now also be edited from the **Response Table**.
- The complement **ADAPT** of the **TUNE** command now works as documented.
- The **COMPUTE DOE** command now make a backup of the FE model parameters and responses and restores the database after all the DOE samples have been evaluated.
- The syntax error in the doe example has been fixed.
- Model updating using modal displacement responses required a manual scaling of the test mode shapes prior to starting the updating process. This is now no longer required because the scaling is done automatically during the first iteration step of the updating process.

FEMtools API Variables

Scalars and Strings

interface.ansys.flags

Specifies to use the blocked (=0) or unblocked (=1) format to export ANSYS .cdb files. (Integer).

