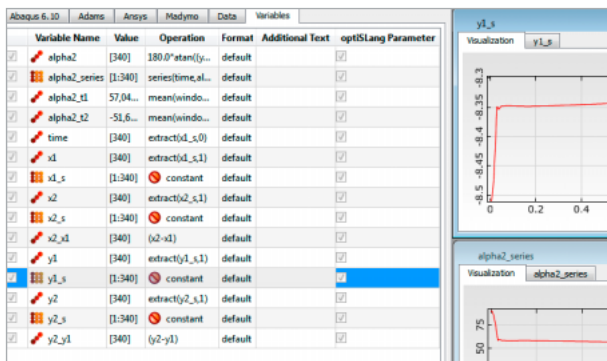


ETK – EXTRACTION TOOL KIT

ETK, the extraction tool kit, allows an easy and comfortable extraction and processing of simulation results for an optimization or stochastic analysis.

Concept

The automated extraction and processing of simulation results is an important task of CAE-based optimization and stochastic analysis. In the past, an automated batchable extraction of responses and its processing to suitable results was often connected with extensive manual work. In order to replace manual scripting and support, a GUI-based extraction and processing results, Dynardo developed an Extraction Tool Kit (ETK).

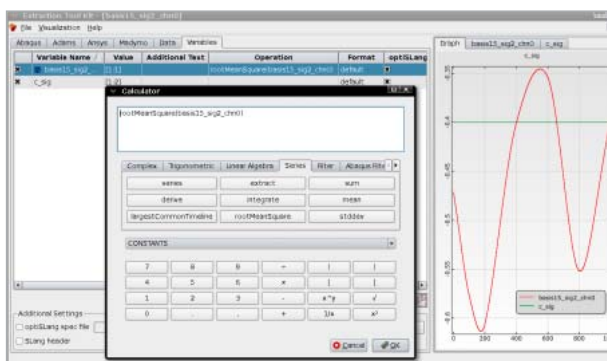


Selection of variables

Now with ETK, arbitrary result values can be easily extracted and processed as well as introduced into optiSLang.

Functionality

ETK has a GUI mode for the definition of results and it offers mathematical functions for single responses and signal processing. To introduce the extracted result val-



Calculations during an Adams extraction

ues into optiSLang, it is possible to generate all necessary files including ASCII output files and optiSLang XML task definition files for connecting optiSLang to a CAE process. When ETK runs in the CAE process, a batch mode for automatic extractions is available.

Customer Benefit

ETK helps the user to have an easy and safe access to simulation results. Thus, time and effort are saved while connecting CAE processes to an optimizer like optiSLang.

„An increased optiSLang use depends on implemented methods as well as the simple and fast extraction of results from CAE processes. In 2007, the Robert Bosch GmbH initiated the development of ETK for Abaqus applications. Thus, the correct definition of response variables can be increased and processing time can be significantly reduced. With its interfaces to ADAMS, ANSYS, Excel and its advanced signal processing, ETK version 2 gains more and more importance for structural mechanic optimizations as a central extraction tool.“

Roland Schirrmacher (Robert Bosch GmbH), optiSLang support coordinator

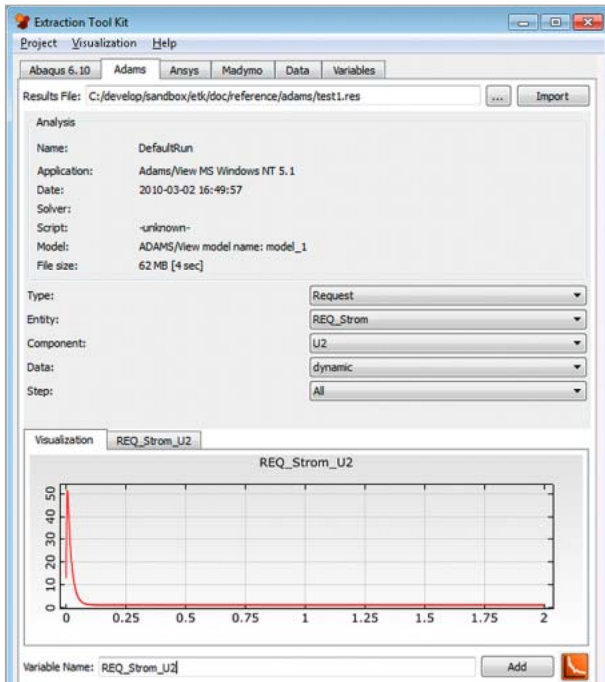
Features

- Batchable extraction of response parameters
- Export of ASCII, Excel, CSV
- Scalar, vector operations and signal processing
- Mathematical basic functionality
- Trigonometric functions
- Linear algebra
- Signal functions
- Macro definition
- Interface et al. to ADAMS, ABAQUS, ANSYS, MADYMO and general TEXT-Files
- Interface to optiSLang for result export
- Boolean operations and conditions

ETK – EXTRACTION TOOL KIT

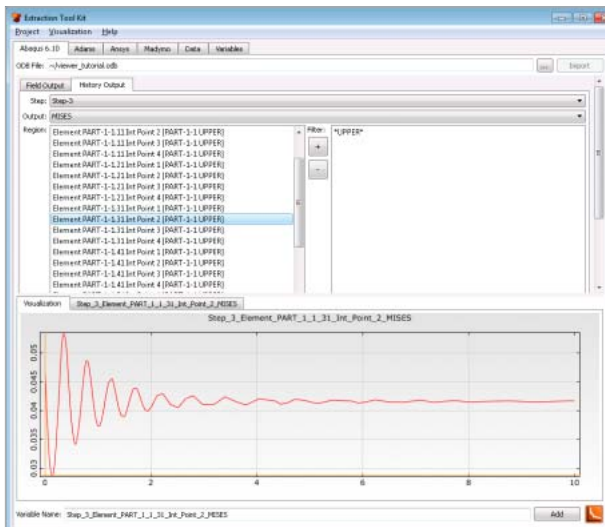
Interfaces

ADAMS formats: Adams result files (.res, .xml)



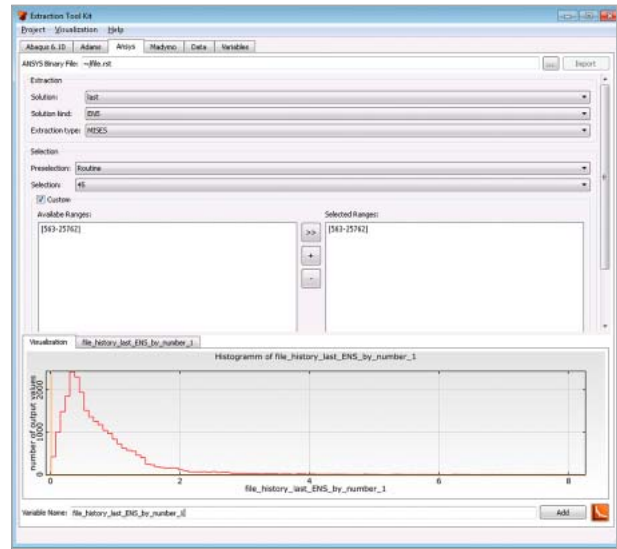
Extraction of an Adams result

ABAQUS formats: Abaqus odb files (.odb)



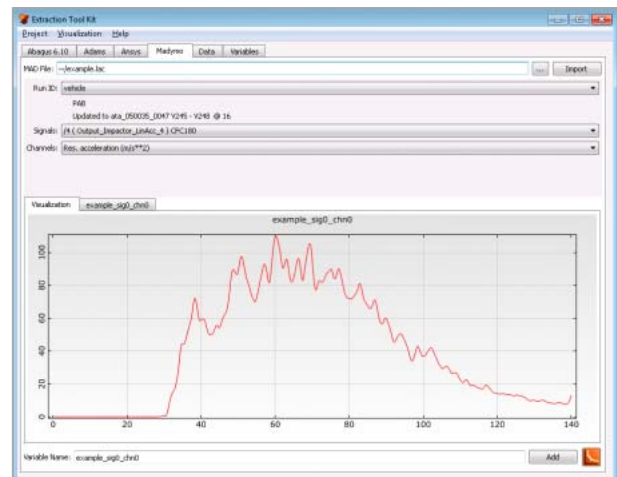
Wildcard-filtered extraction of an Abaqus history output variable

ANSYS formats: Ansys result files (.rst, .rmg, .rth, .rfl)



Extraction of an ANSYS output variable

MADYMO formats:
classically formatted MAD files (non HDF5)



Extraction of an ANSYS output variable

ASCII files