MathModelica – modelling, simulation, analysis, and documentation

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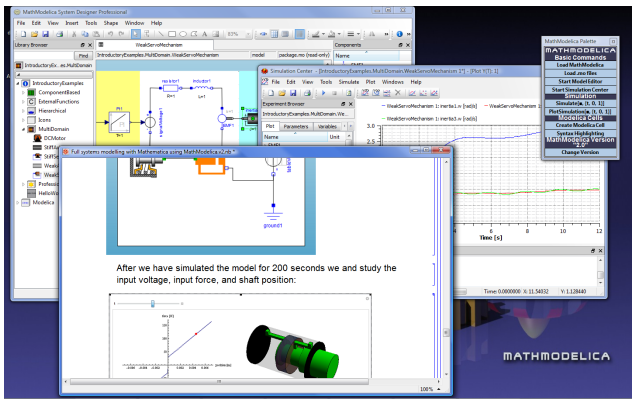
MathModelica is a platform for engineering as well as life science modelling and simulation based on the Modelica language. It provides an interactive graphical modelling environment and a customizable set of Modelica component libraries. During this presentation we will give a brief summary of the latest news and a sneak peek at the future.



MathModelica screenshot, including System Designer, Simulation Center, and a Mathematica notebook.

1.1 Modelling

Support for several new libraries has been implemented since the last Modelica conference and it is now possible to model 3D mechanical models.

1.2 Simulation

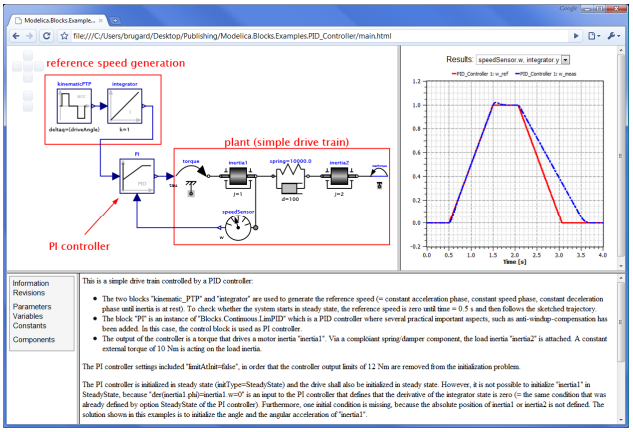
New solvers have been introduced, including a steady state solver, which allows for convenient initialization of models. The produced c-code and executable are fully accessible for the user and 3D animation is also included.

1.3 Analysis

The *Mathematica* connection has been improved, with a better ability to access, manipulate and analyse model equations. Furthermore FFT and sensitivity analysis have been added in the *Simulation Center*.

1.4 Documentation

An html editor, that enables convenient documentation of models, has been added. Together with the new publishing feature our users are just a few clicks away from creating interactive html documentation of their models and libraries as illustrated below.



Screenshot of a published Modelica model.

1.5 Editions

MathModelica now has two different editions[1], Professional and Student editions, and is available for Windows and Mac OS X (Leopard).

2 The future

A possibility to import and export from SBML will soon be made available and during autumn support for all MSL libraries except for the new Media/Fluid library will be included.

MathCore is also part of the ITEA2 project OPENPROD where support for embedded systems and integration with UML/SysML will be developed. A great effort is also put on extended Modelica support with the ambition of becoming compatible with the latest Modelica standard within a near future.

[1] A customized edition for ABB is also available