# *MathModelica 3* – modelling, simulation, analysis, and documentation

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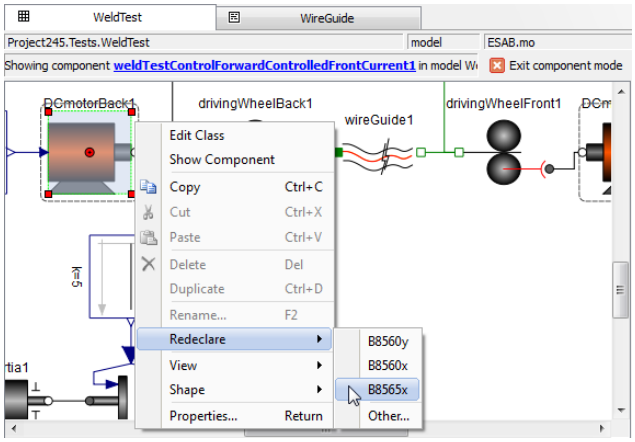
*MathModelica* is a platform for engineering as well as life science modelling and simulation based on the Modelica language. It provides an interactive graphical modelling environment and a customizable set of Modelica component libraries. In this presentation we will give an overview of the new features of *MathModelica 3*.

## 1.1 Modelling

MathModelica 3 is based on Modelica 3.1, including support for the MultiBody library. The graphical view now also supports the replaceable/redeclare construct, making it easy to develop re-configurable models.

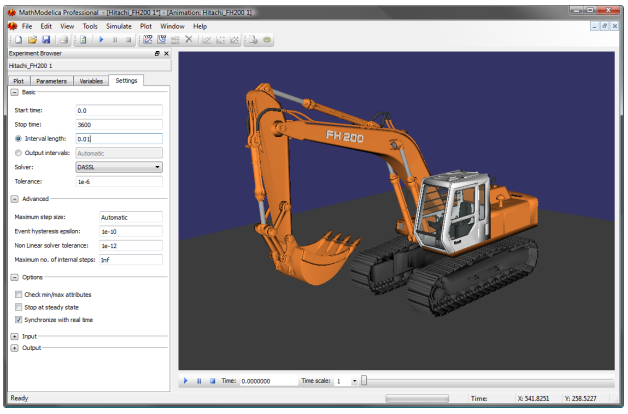



*Model configuration in the Model Editor.*

Import and export from and to SBML is now also available, making it possible to take advantage of SBML models when developing metabolic pathways.

## 1.2 Simulation

MathModelica 3 has support for 3D visualization including CAD visualization using the DXF[1] and OBJ[2] formats, which makes it easier for users to understand the behaviour of 3d mechanical systems.




*Animation of a Hitachi FH 200 in Simulation Center.*

Simulation can now also be synchronized and visualized in real time, thanks to a generic and efficient API for connecting with simulations running in real time.

## 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

The html editor now includes an advanced What You See is What You Get-editor as well as enhancements for the publishing of your model and libraries and results as interactive web pages.

## 1.5 Editions

*MathModelica* has two different editions[3], Professional and Student editions, and is available for Windows (XP and later), and Mac OS X (Leopard and Snow Leopard).

[1] DXF (Drawing Interchange Format) is a data exchange standard defined by AutoDesk, Inc.

[2] OBJ is an open geometry definition file format first developed by Wavefront Technologies.

[3] A customized edition for ABB is also available