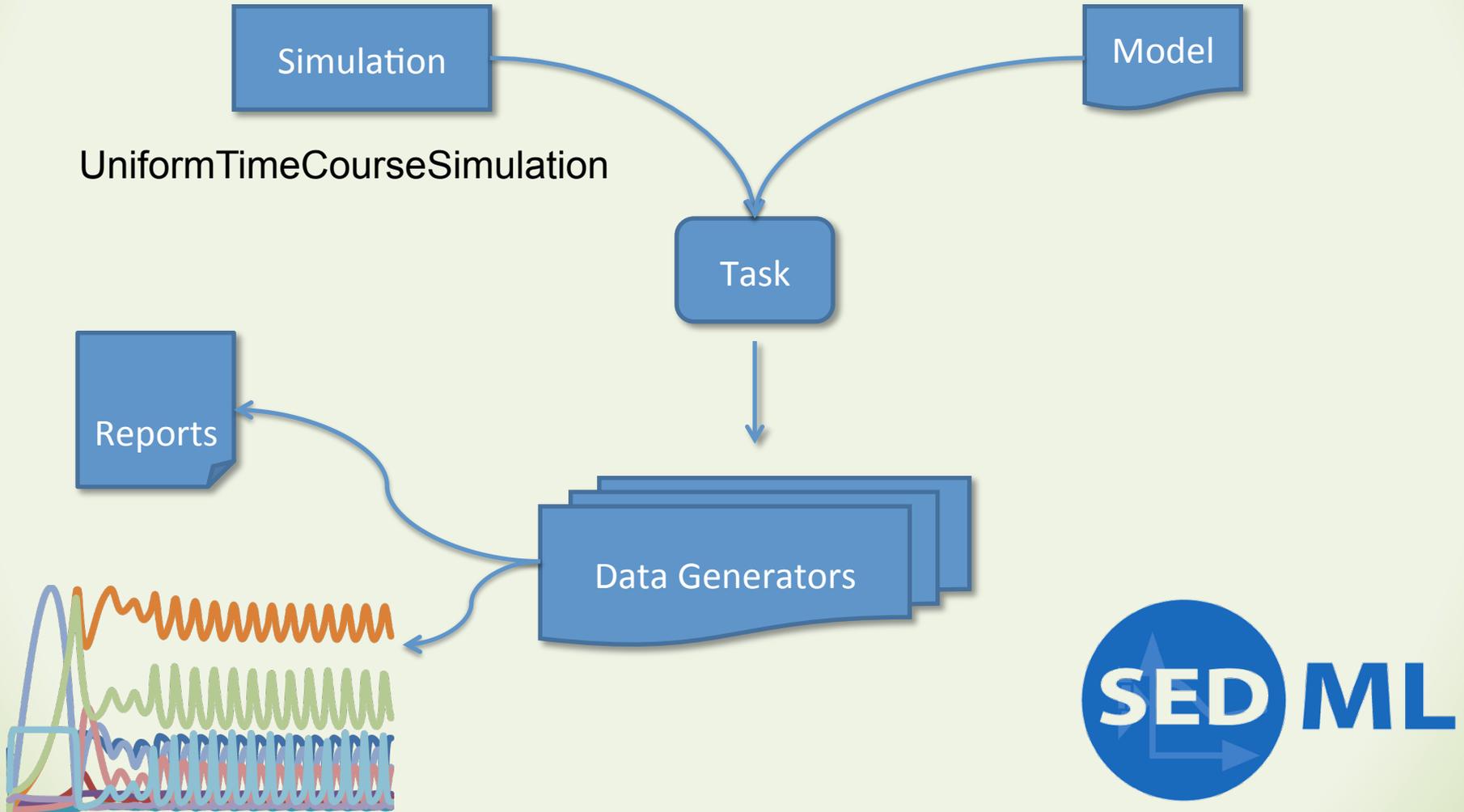




Nested Tasks Proposal for SED-ML

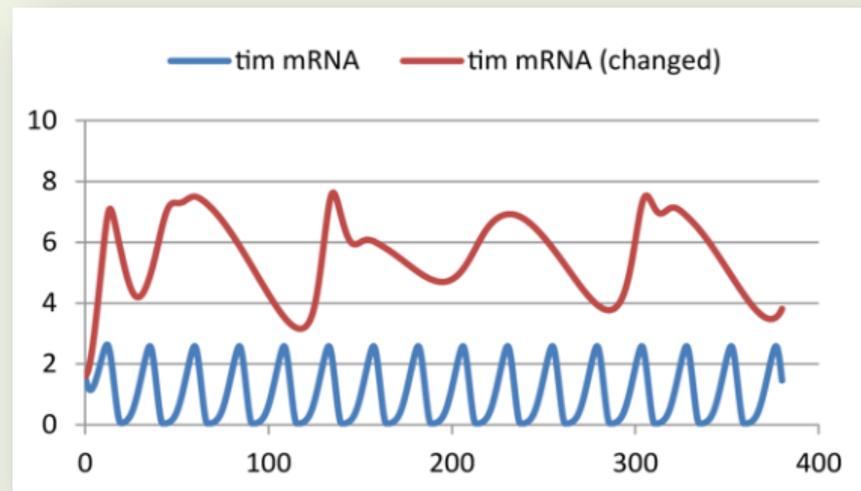
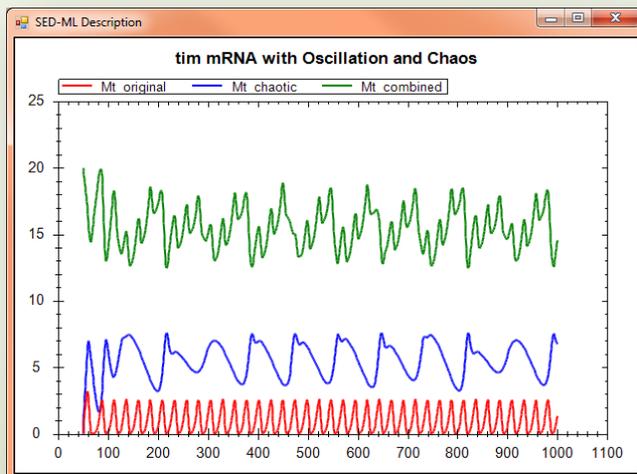
Frank T. Bergmann

The Current State

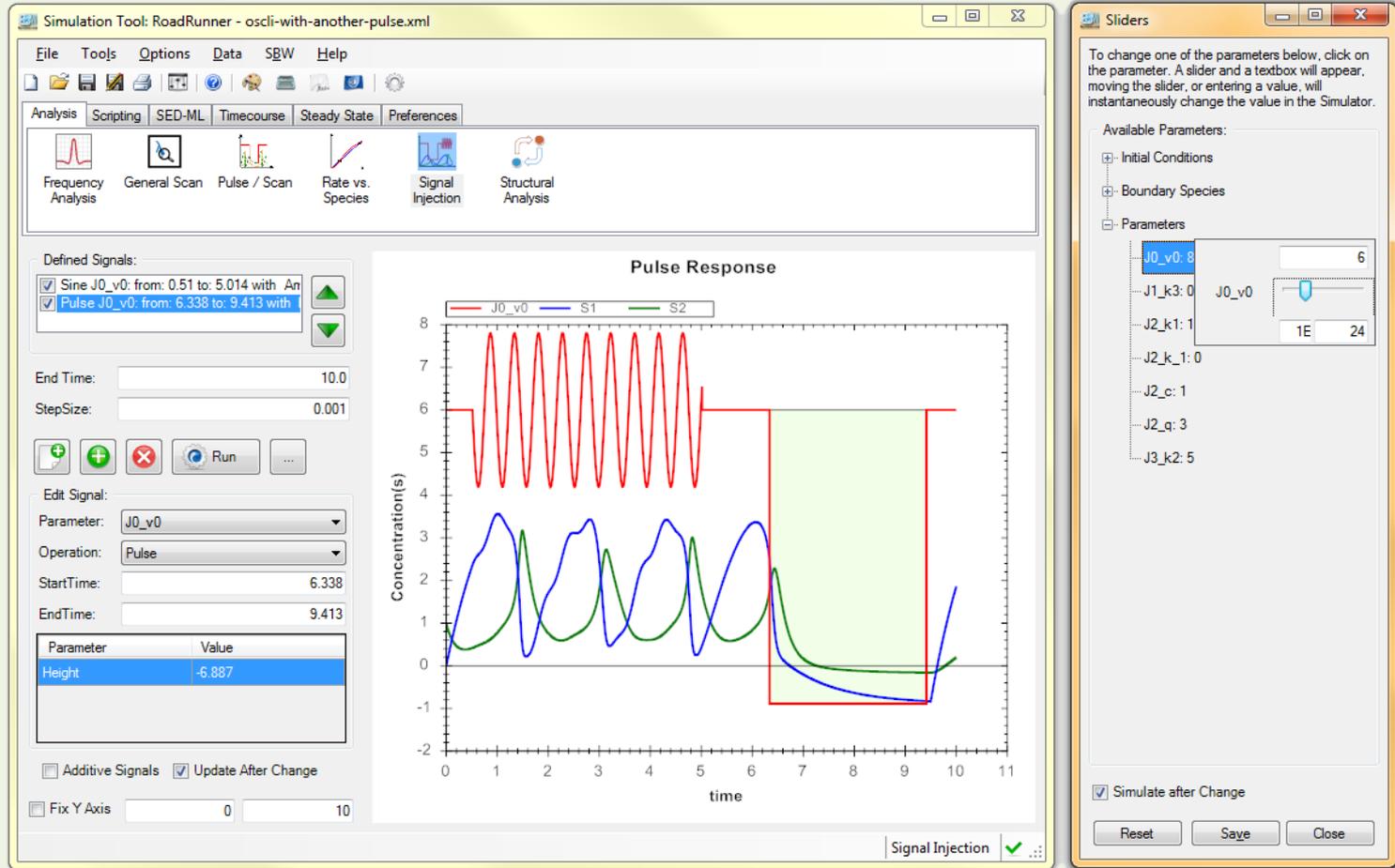


The Current State

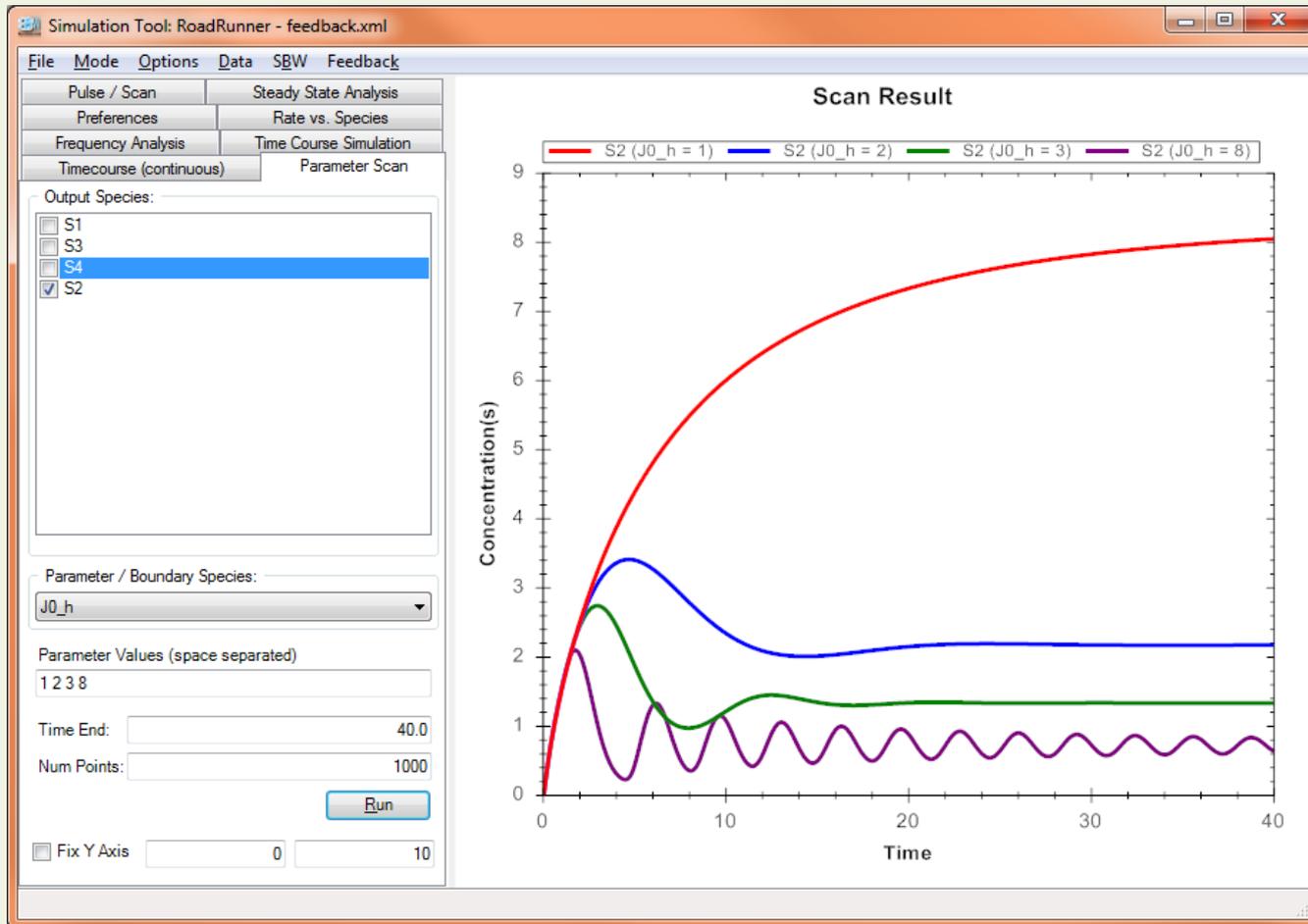
- Carry out multiple time course simulations
- Collect results from these simulations
- Combine results from these simulations
- Report / Graph the results



What it does not cover



Parameter Scans



Motivation

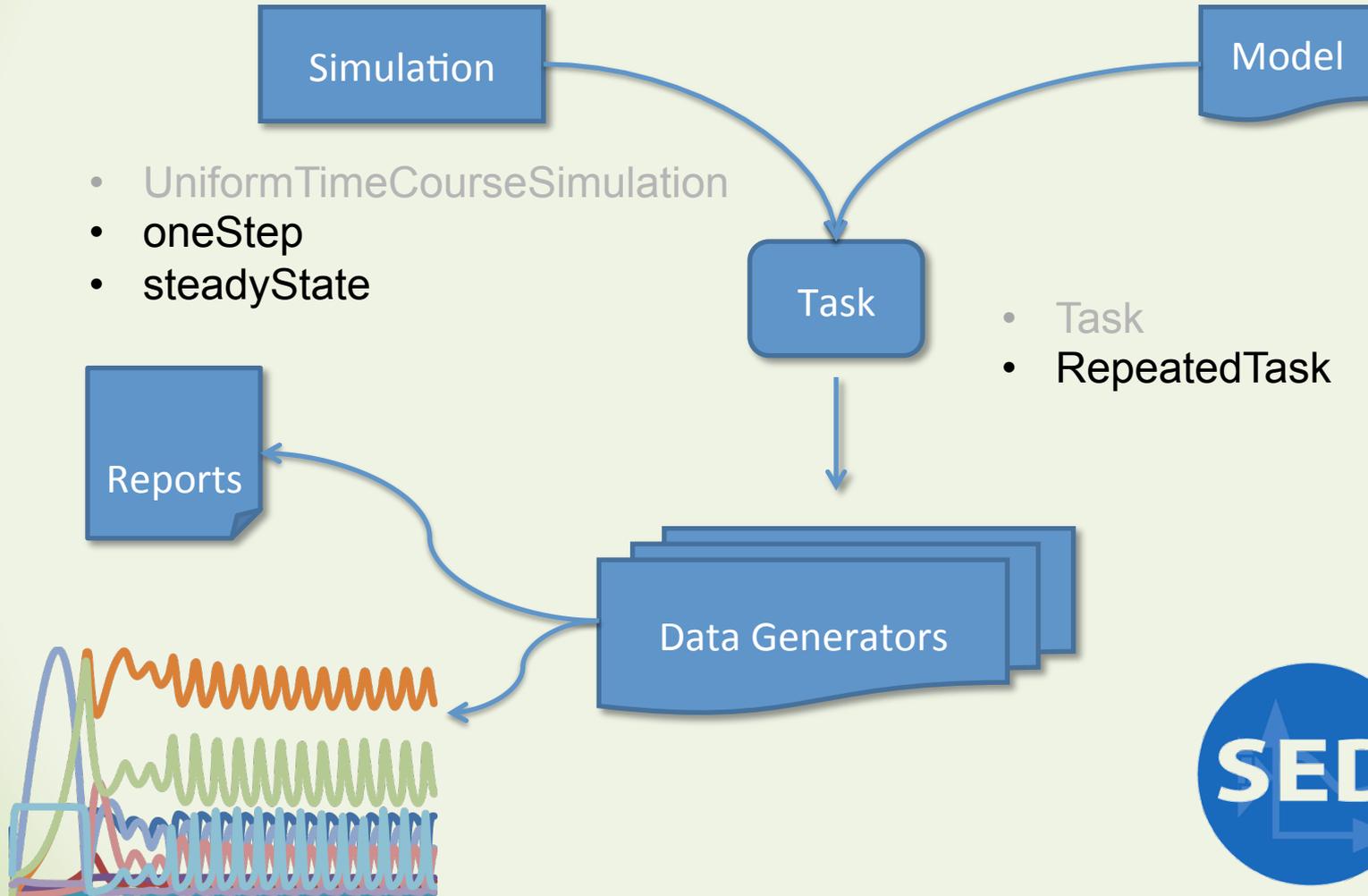
- Of course there are more simulation to be captured. But the extensions ought to happen in an orthogonal way, so that we can cover more of what people want to do, by adding additional:
 - Simulation Classes
 - Task Classes
 - DataGenerator Classes
 - Output Classes

Motivation

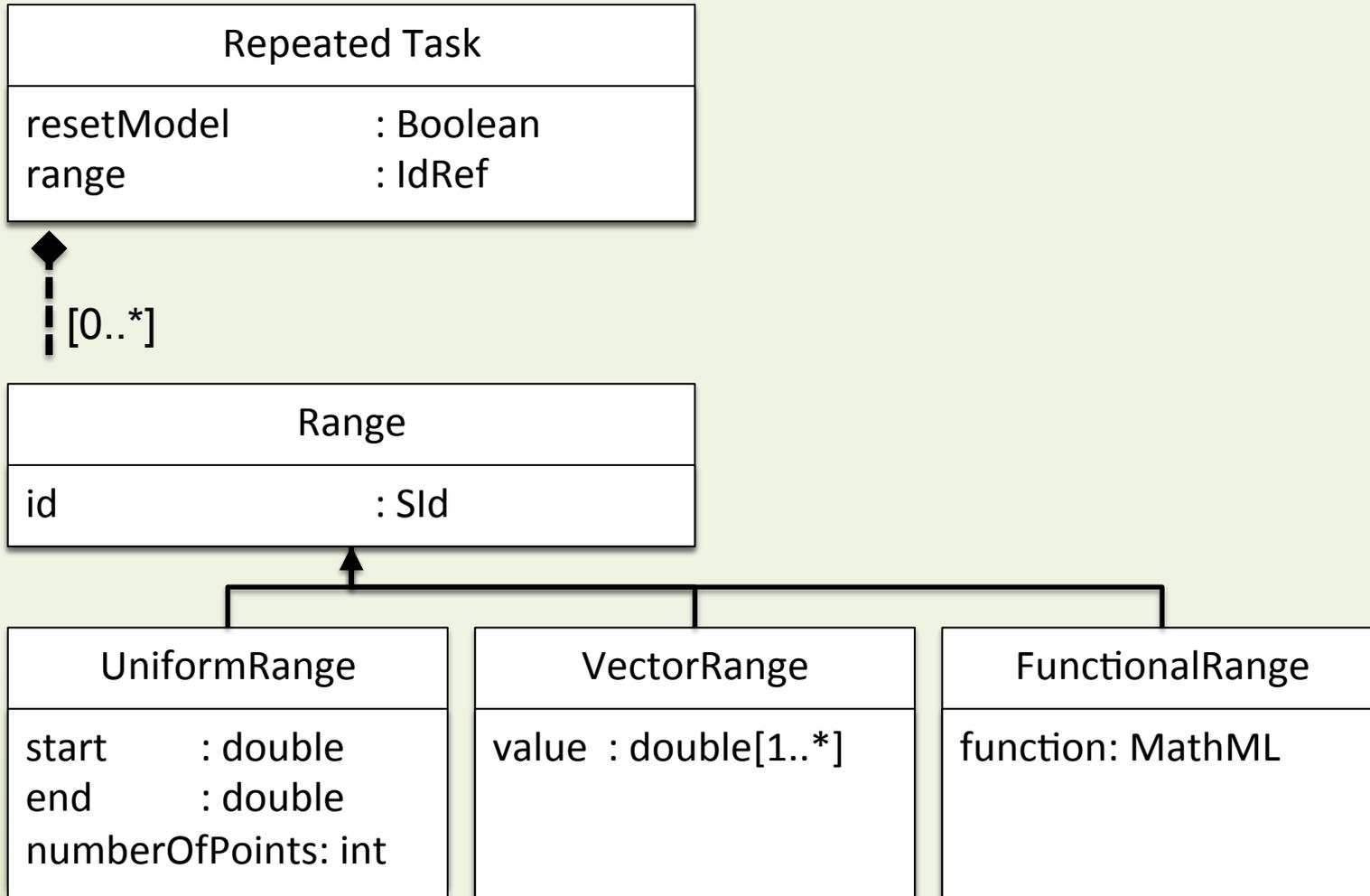
- Expand SED-ML, in a natural, compatible way, that allows to carry out interconnected simulation tasks.
- ➔ Proposal of a new Task Class: The RepeatedTask, that allows multiple simulation tasks to be invoked while changing model variables.

THE PROPOSAL

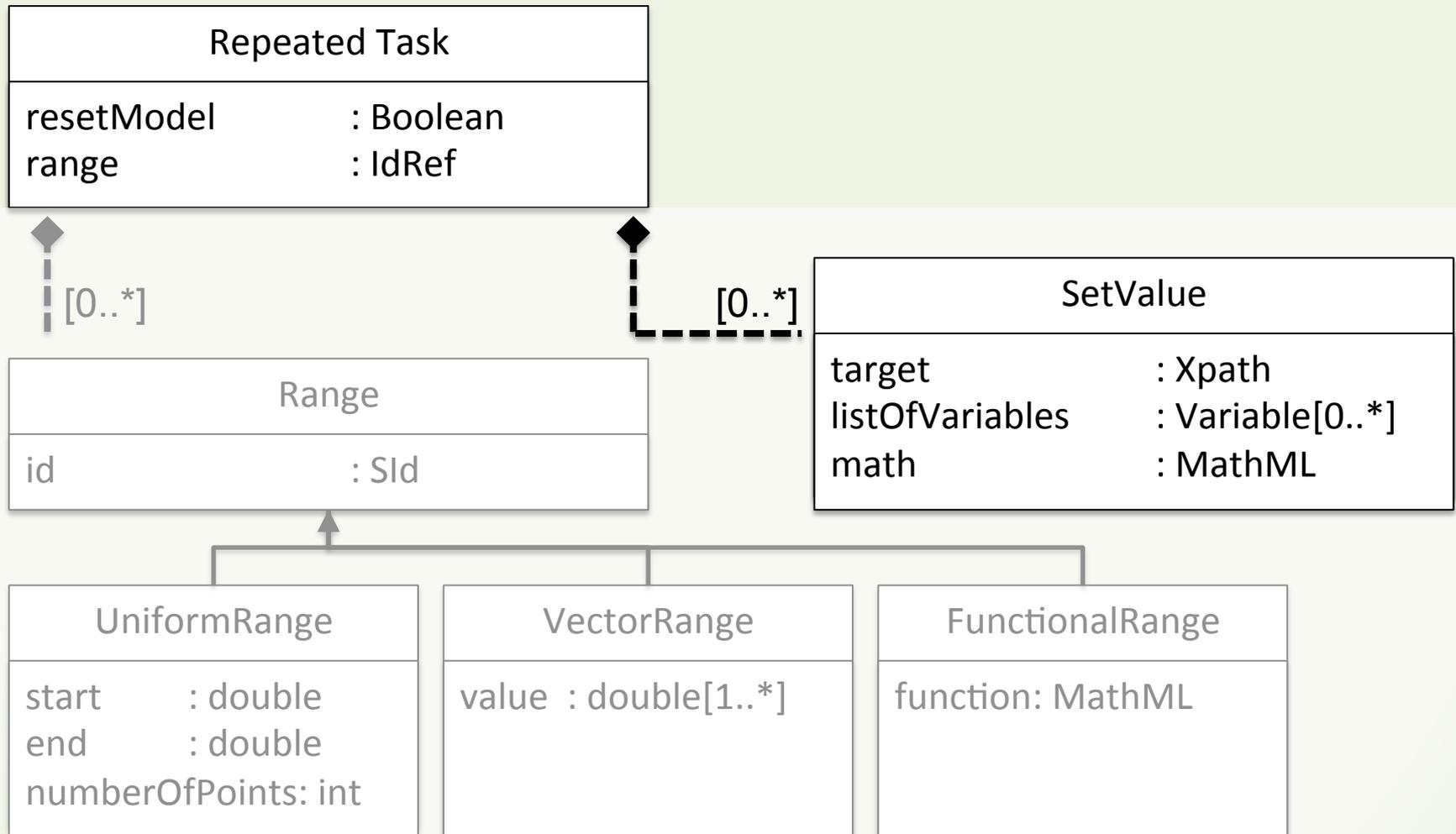
The Proposal



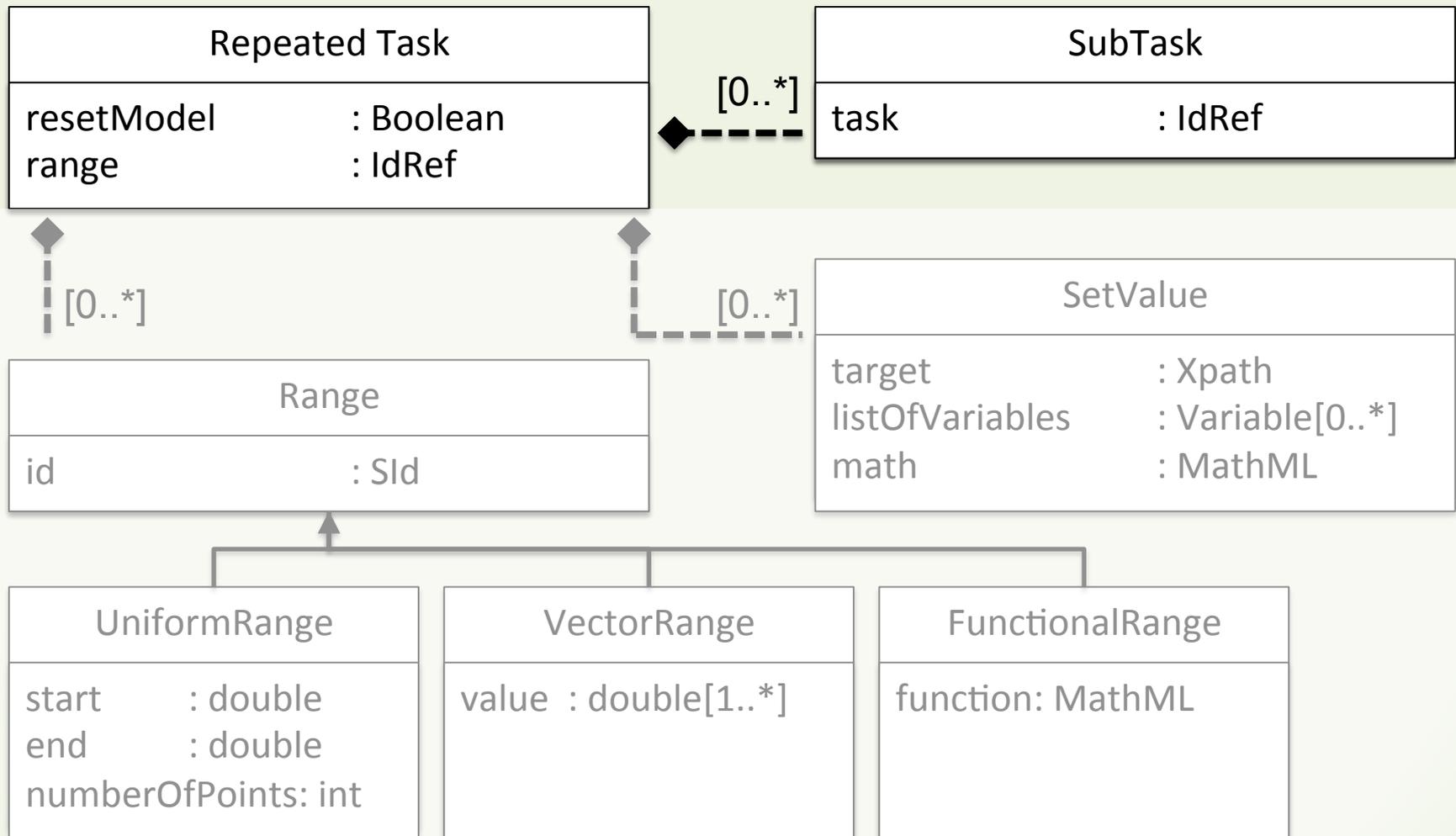
Repeated Task



Repeated Task



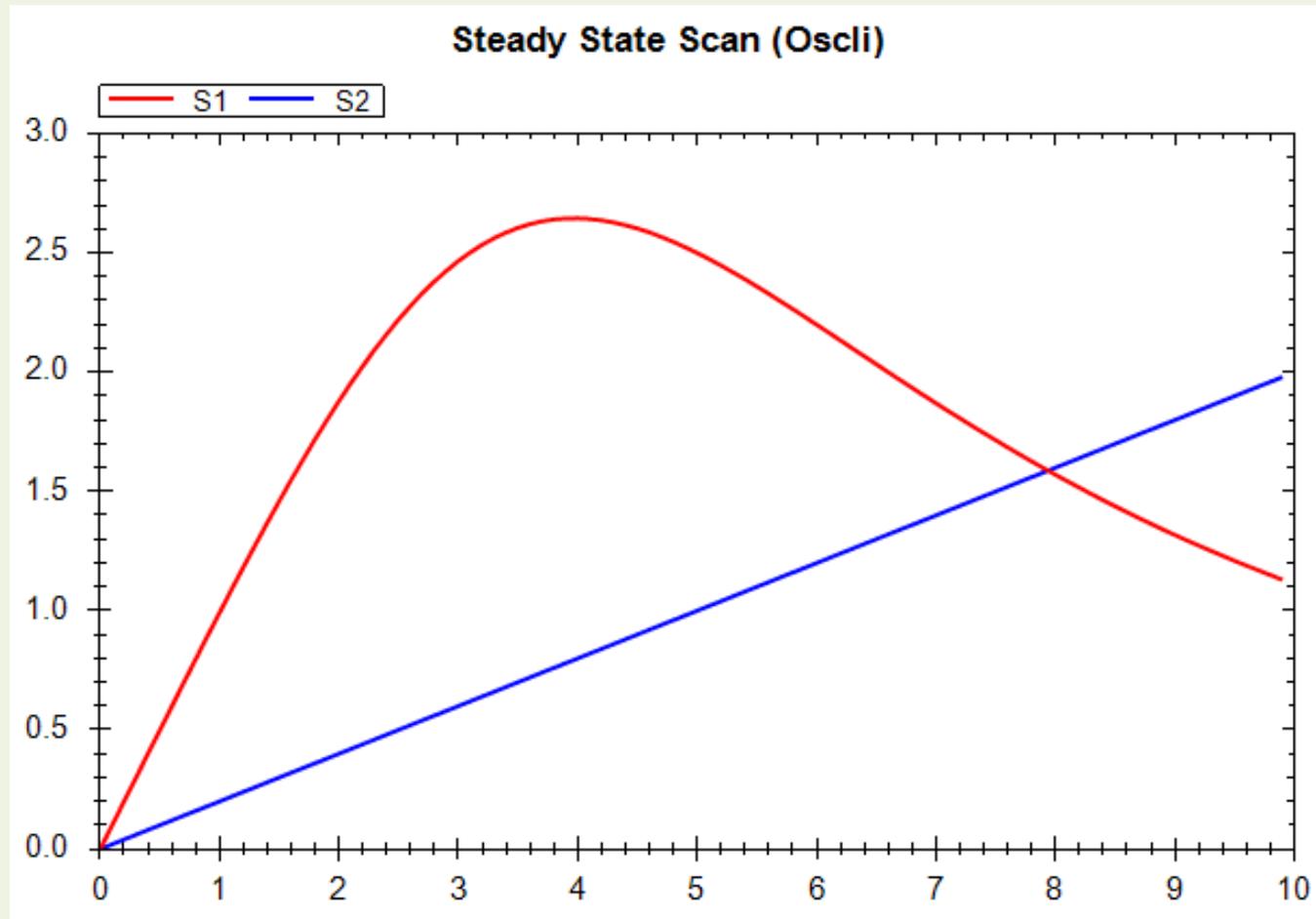
Repeated Task



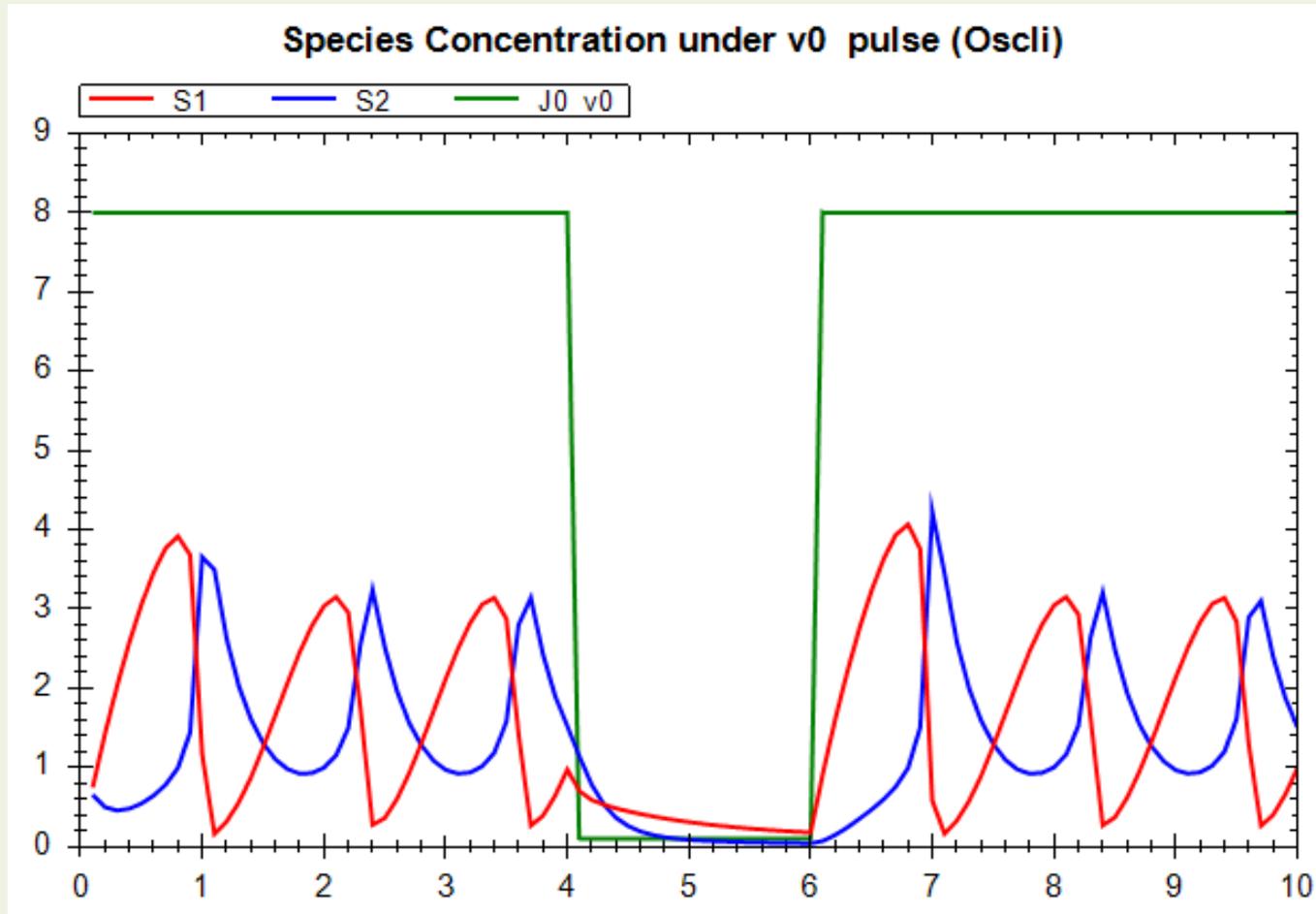
Features

- Carry out simulations,
- continue with other simulations
- Modify model variables during simulation runs

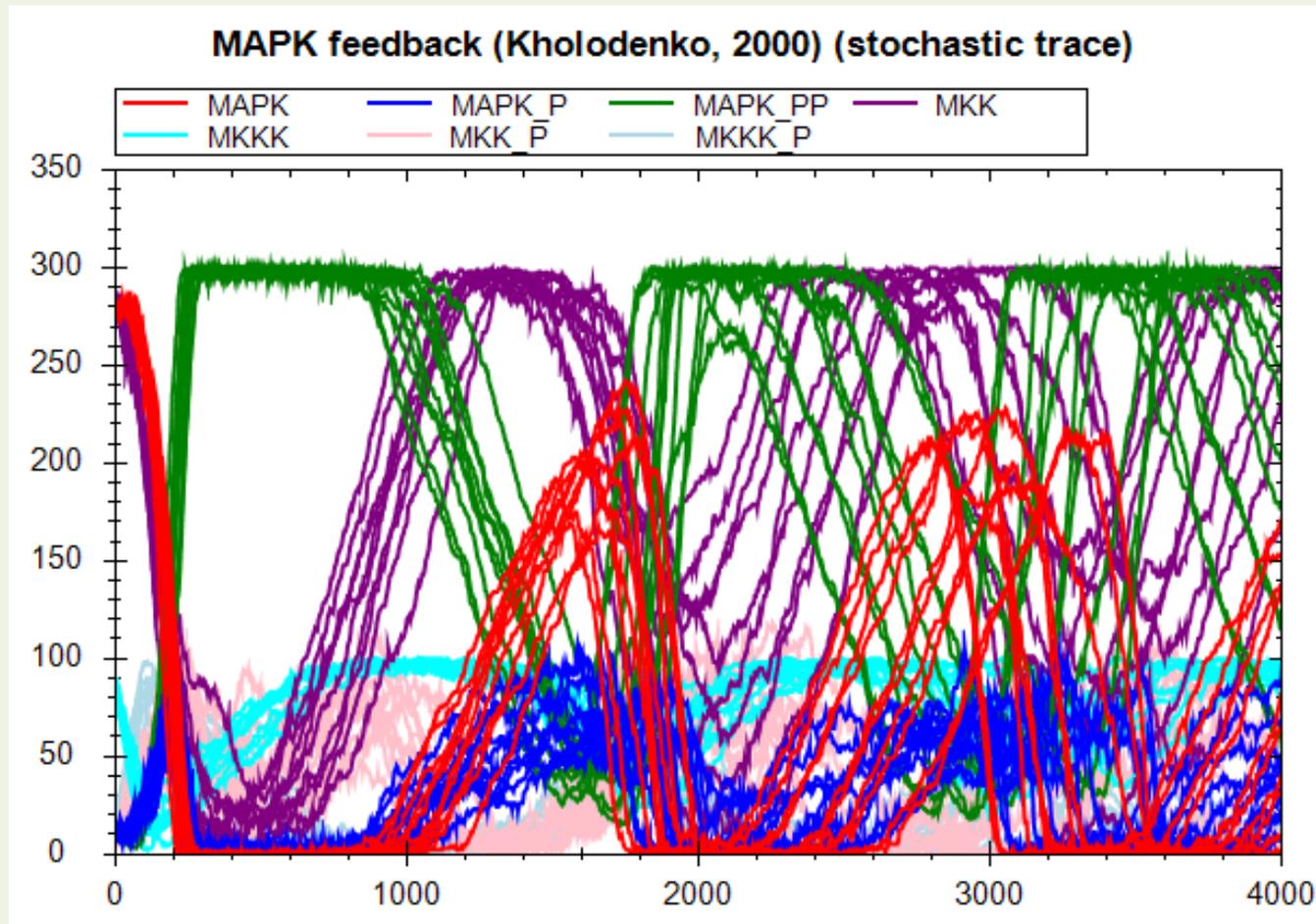
Parameter Scan



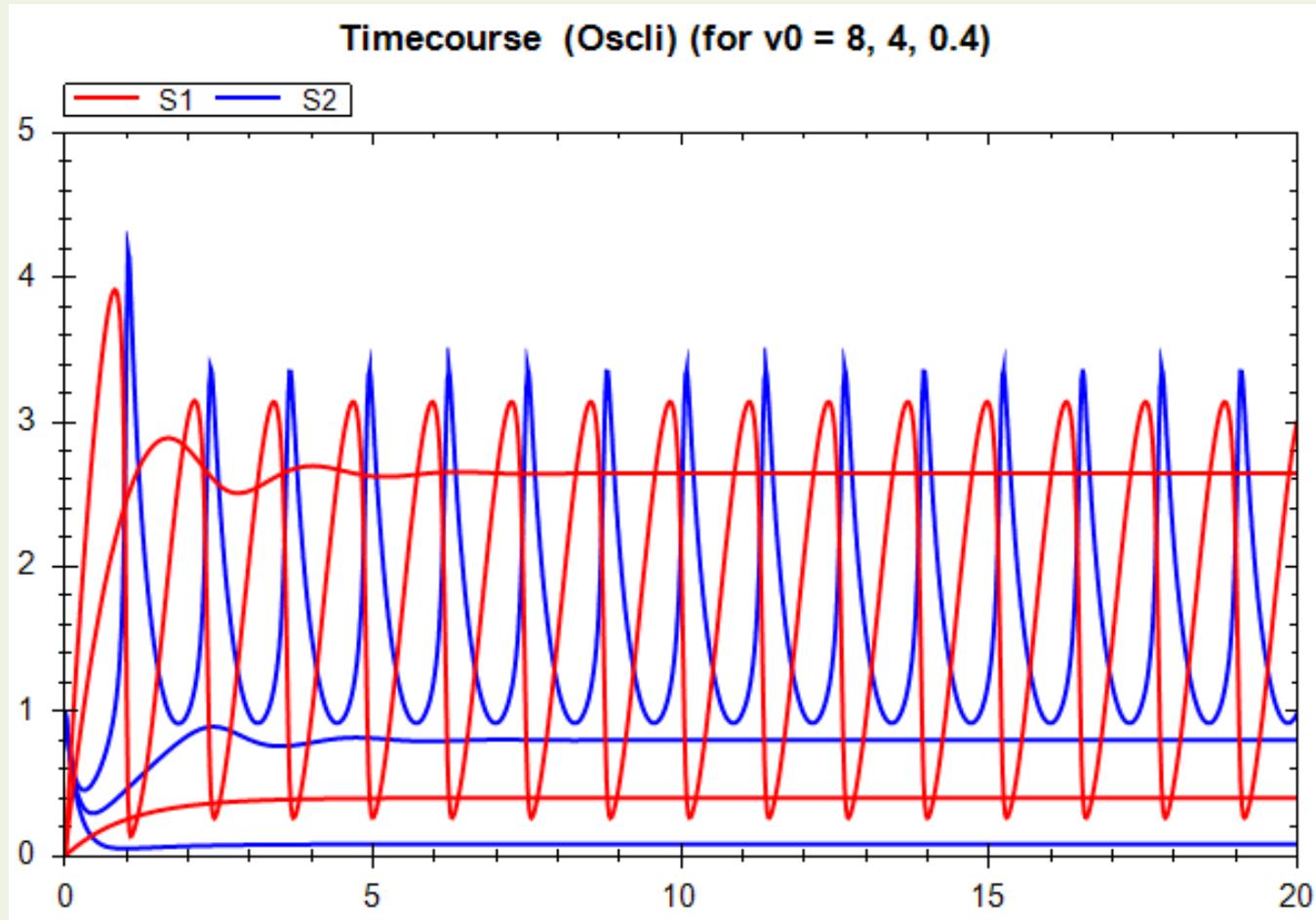
Pulse Experiments



Repeated Stochastic Traces



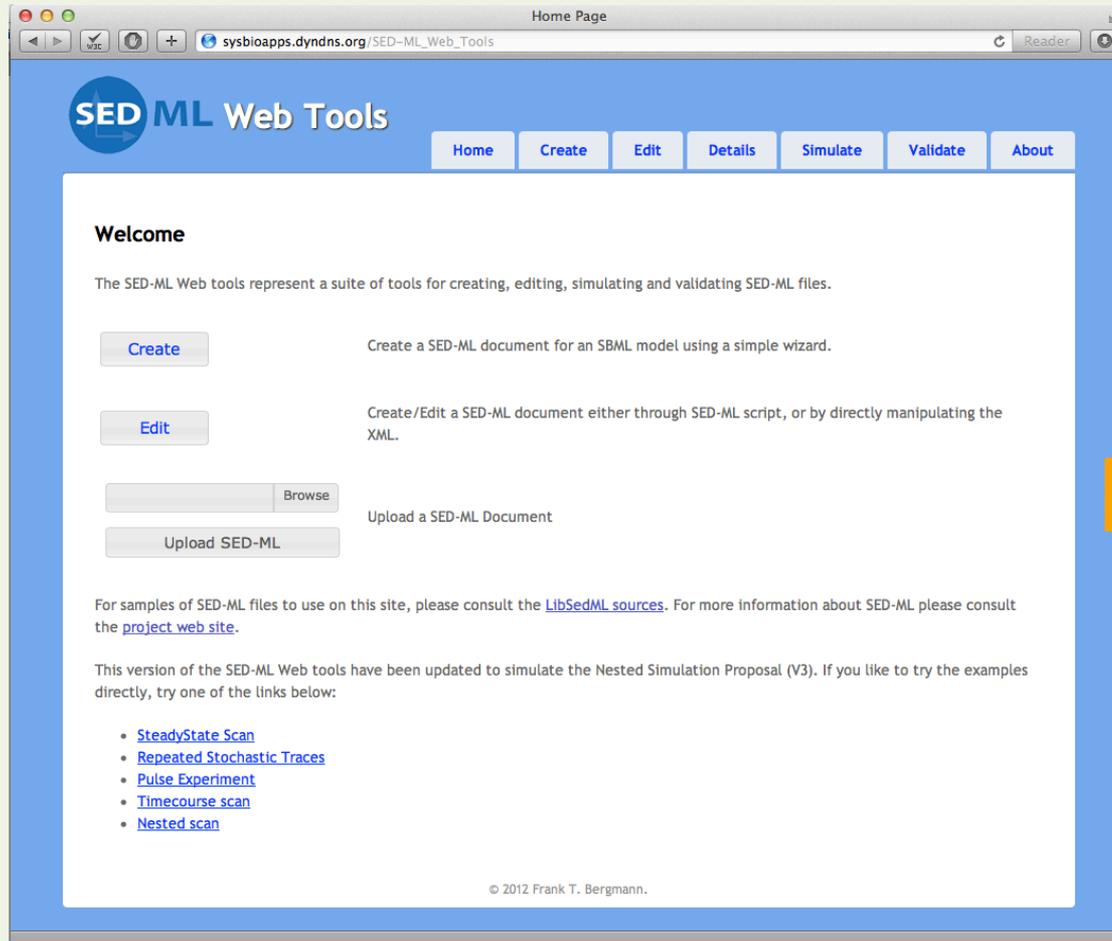
Time Course Parameter Scan



Place For Orthogonal Extensions...

- Parameterizable Simulation Classes
- Storing the last state of a task as a new model
- Introduction of new Variables (for accessing implied variables)
- Advanced Post-processing in Data Generators
- Access of external data

Available Online



The screenshot shows a web browser window with the address bar displaying `sysbioapps.dyndns.org/SED-ML_Web_Tools`. The page title is "Home Page". The website header features the "SED ML Web Tools" logo and a navigation menu with buttons for "Home", "Create", "Edit", "Details", "Simulate", "Validate", and "About".

Welcome

The SED-ML Web tools represent a suite of tools for creating, editing, simulating and validating SED-ML files.

Create Create a SED-ML document for an SBML model using a simple wizard.

Edit Create/Edit a SED-ML document either through SED-ML script, or by directly manipulating the XML.

Upload a SED-ML Document

For samples of SED-ML files to use on this site, please consult the [LibSedML sources](#). For more information about SED-ML please consult the [project web site](#).

This version of the SED-ML Web tools have been updated to simulate the Nested Simulation Proposal (V3). If you like to try the examples directly, try one of the links below:

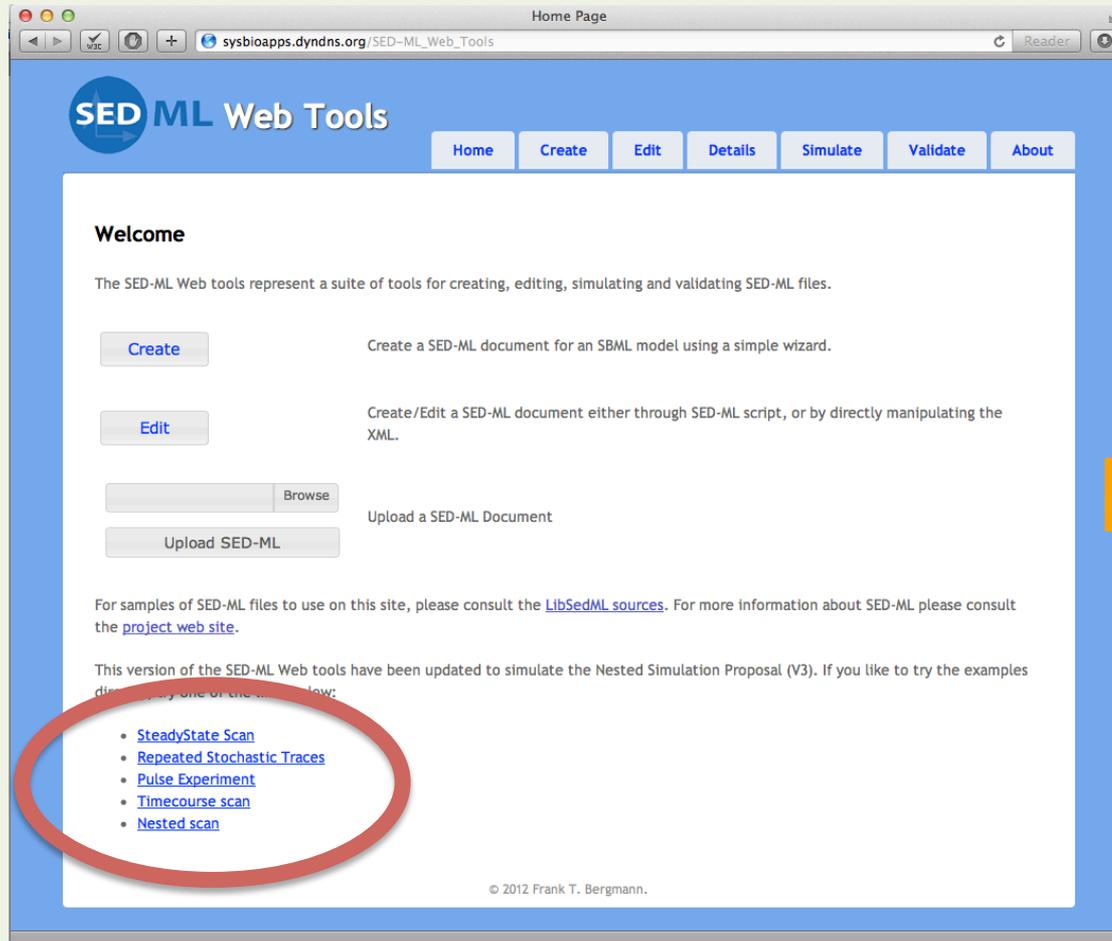
- [SteadyState Scan](#)
- [Repeated Stochastic Traces](#)
- [Pulse Experiment](#)
- [Timecourse scan](#)
- [Nested scan](#)

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Feedback

http://sysbioapps.dyndns.org/SED-ML_Web_Tools

Available Online



The screenshot shows a web browser window with the address bar displaying `sysbioapps.dyndns.org/SED-ML_Web_Tools`. The page title is "SED-ML Web Tools". A navigation menu includes links for Home, Create, Edit, Details, Simulate, Validate, and About. The main content area features a "Welcome" section with the text: "The SED-ML Web tools represent a suite of tools for creating, editing, simulating and validating SED-ML files." Below this, there are three main tool options: "Create" (with description: "Create a SED-ML document for an SBML model using a simple wizard."), "Edit" (with description: "Create/Edit a SED-ML document either through SED-ML script, or by directly manipulating the XML."), and "Upload SED-ML" (with a "Browse" button and description: "Upload a SED-ML Document"). A "Feedback" button is visible on the right side. At the bottom, there is a list of examples: "SteadyState Scan", "Repeated Stochastic Traces", "Pulse Experiment", "Timecourse scan", and "Nested scan". A red oval highlights this list. The footer contains the copyright notice: "© 2012 Frank T. Bergmann."

http://sysbioapps.dyndns.org/SED-ML_Web_Tools

Thank You!

- More Information here:
 - <http://co.mbine.org/standards/sed-ml/proposal>
 - <http://sed-ml.org>
 - <http://sysbioapps.dyndns.org>
 - <http://frank-fbergmann.blogspot.com>