Kepler

SEEK Early Career Faculty Workshop

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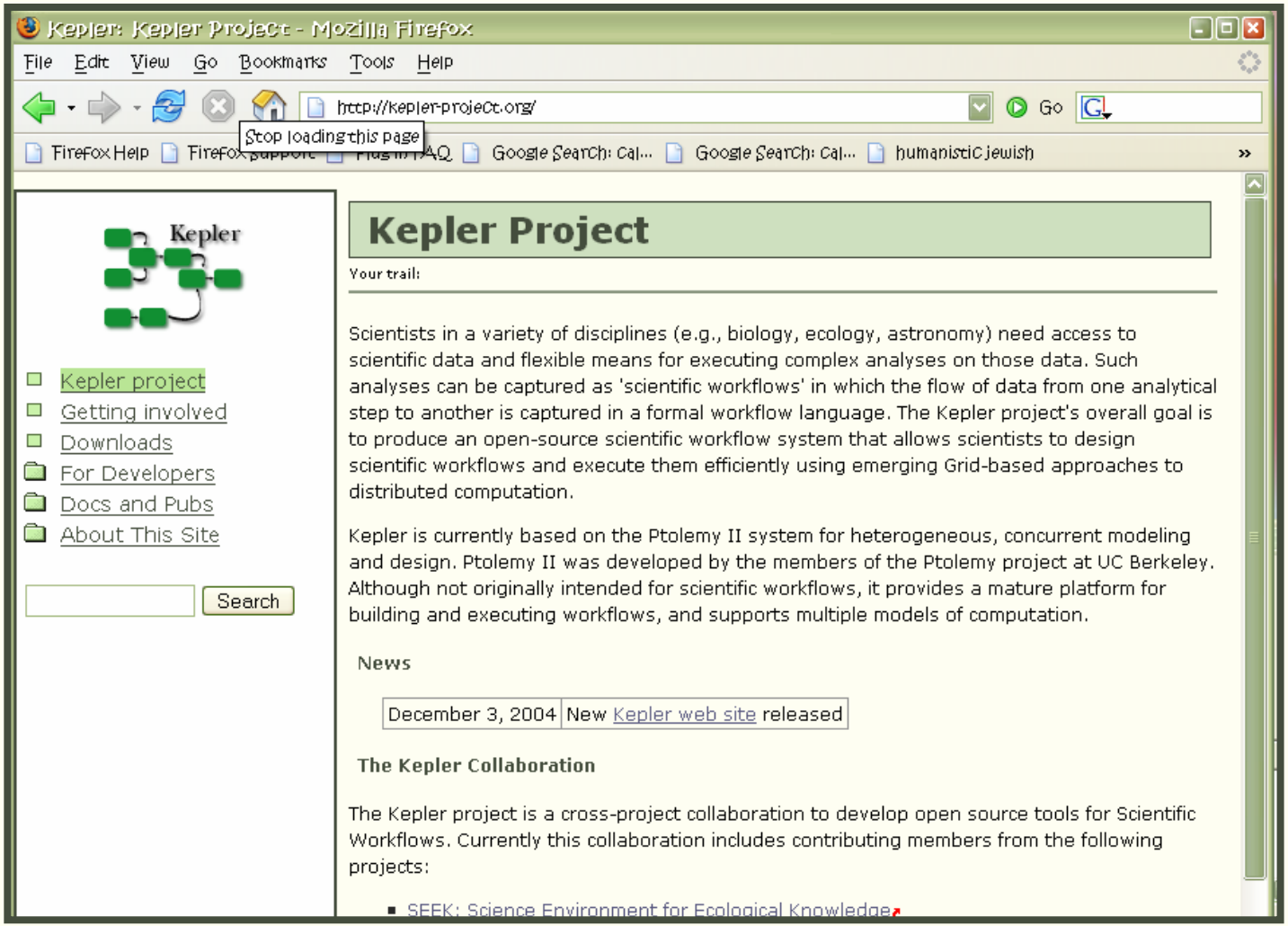
LTER Network Office

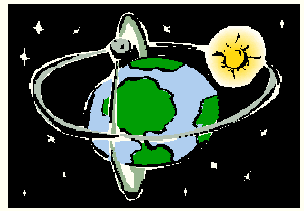
Kepler: http://kepler.ecoinformatics.org



LTER KNB NSF

Kepler

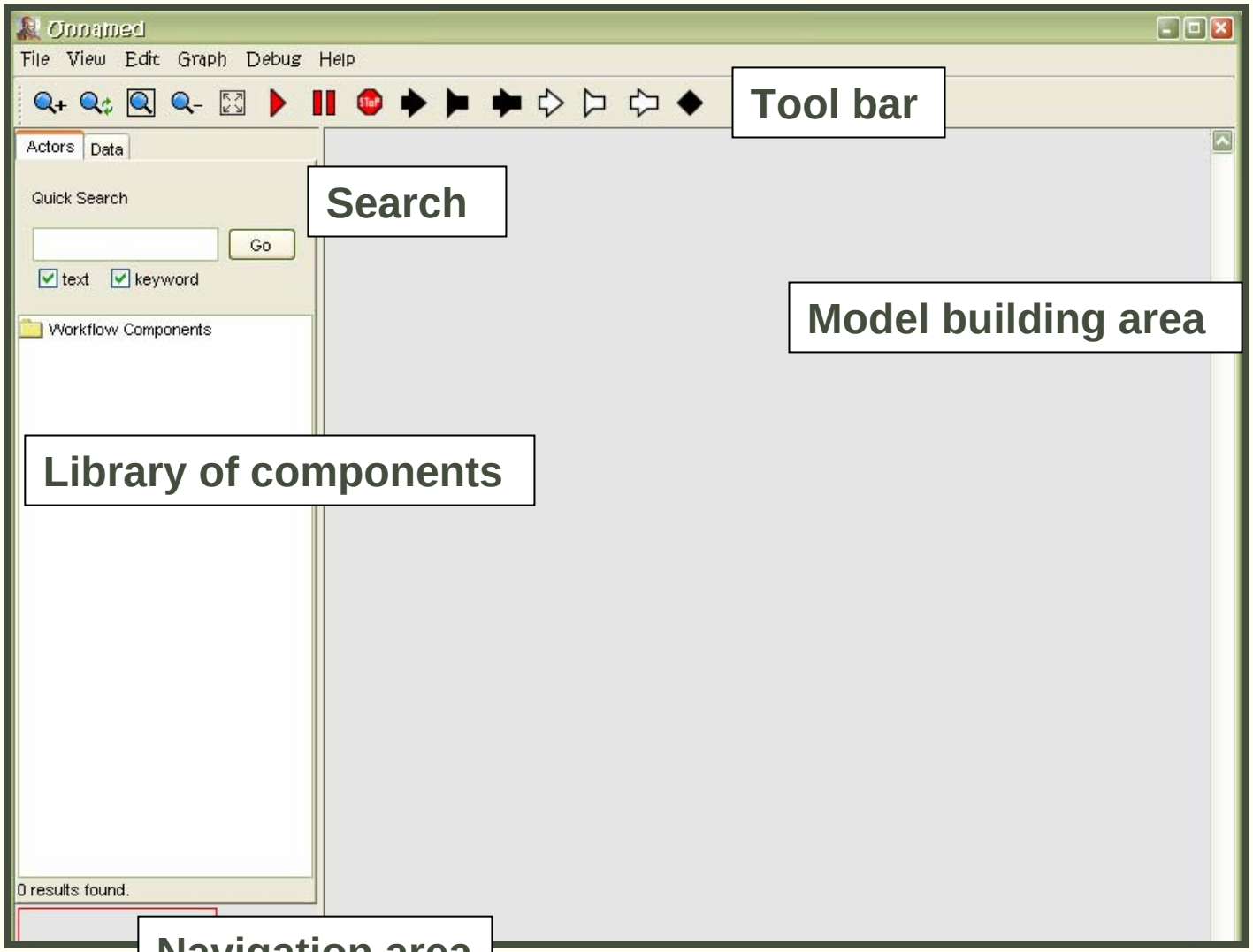
- framework for design, execution and deployment of scientific workflows
- … based on Ptolemy II



Kepler Interface

- The graph editor
  - Tool bar
  - Actor library
  - Director library

Graph Editor



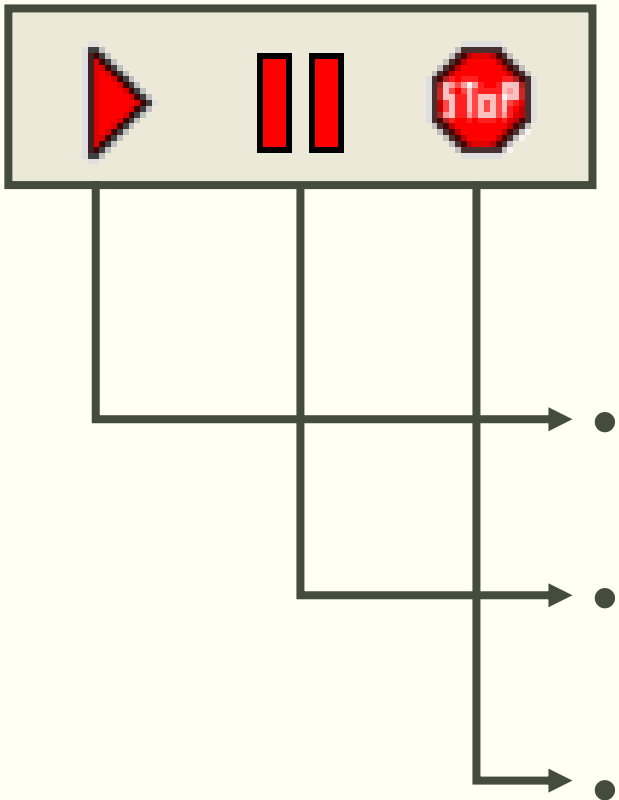
Tool Bar

- Viewing
- Running model
- Adding ports

Viewing

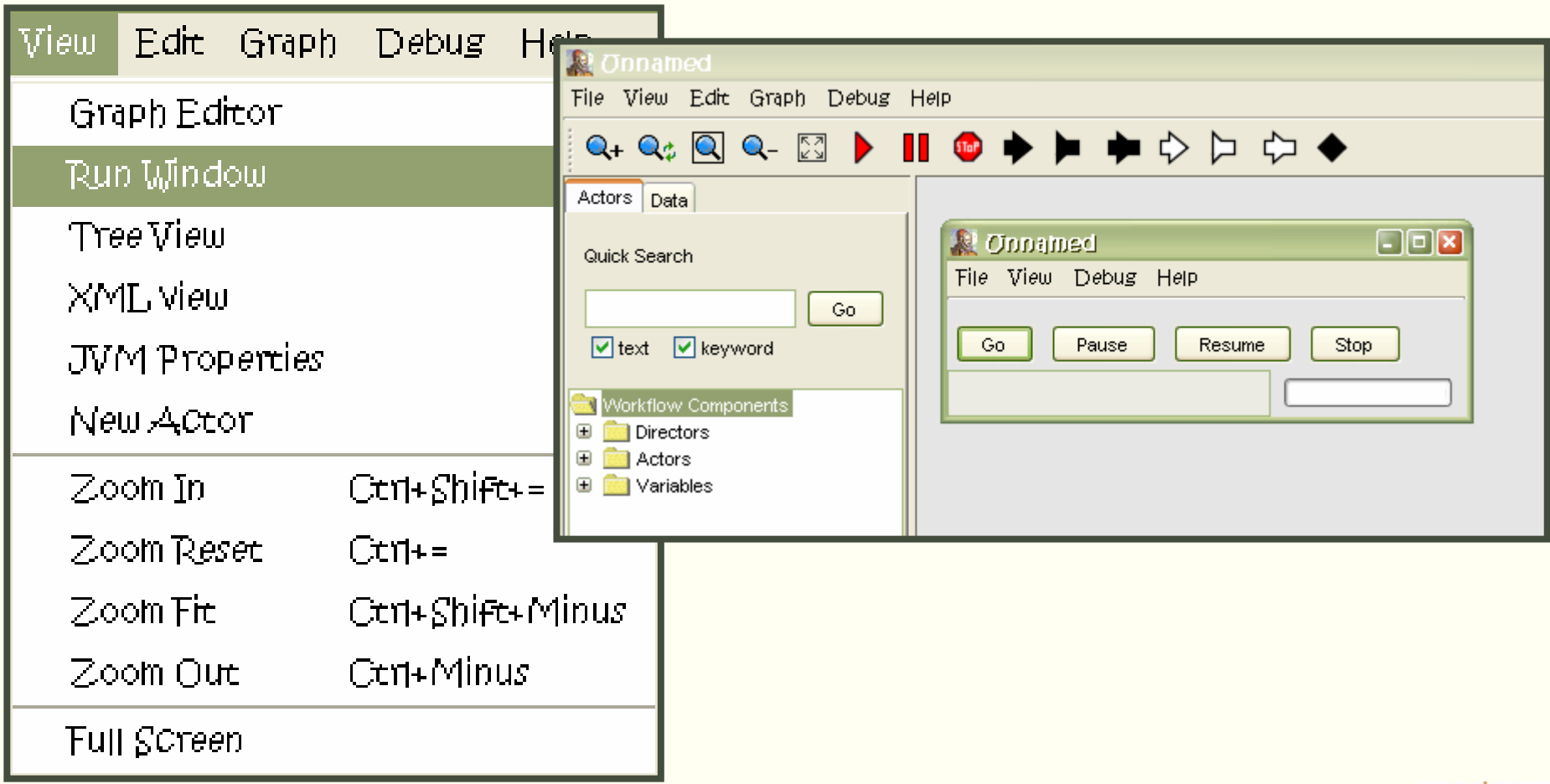
- Zoom In
- Zoom Reset
- Zoom Fit
- Zoom Out
- Full Screen

Running Model

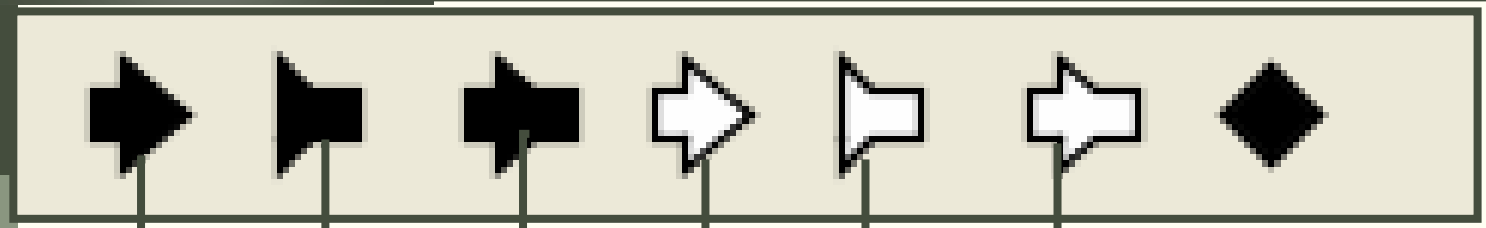


- Run or resume model
- Pause the model
- Stop the model

Running Model



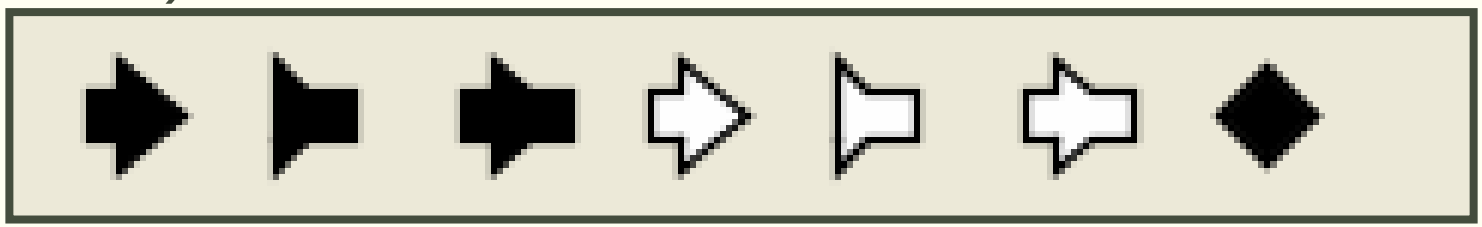
Adding Ports



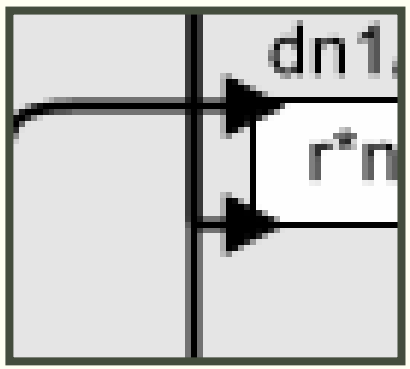
- New input port
- New output port
- New input/output port
- New input multiport
- New output multiport
- New input/output multiport

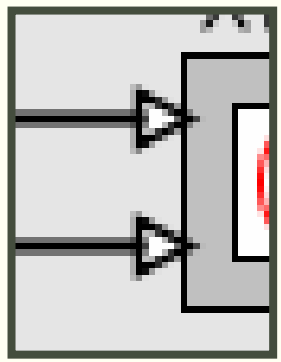
Adding Ports

- There are two ways to add ports
  - One to connect workflows (AKA composite actors)

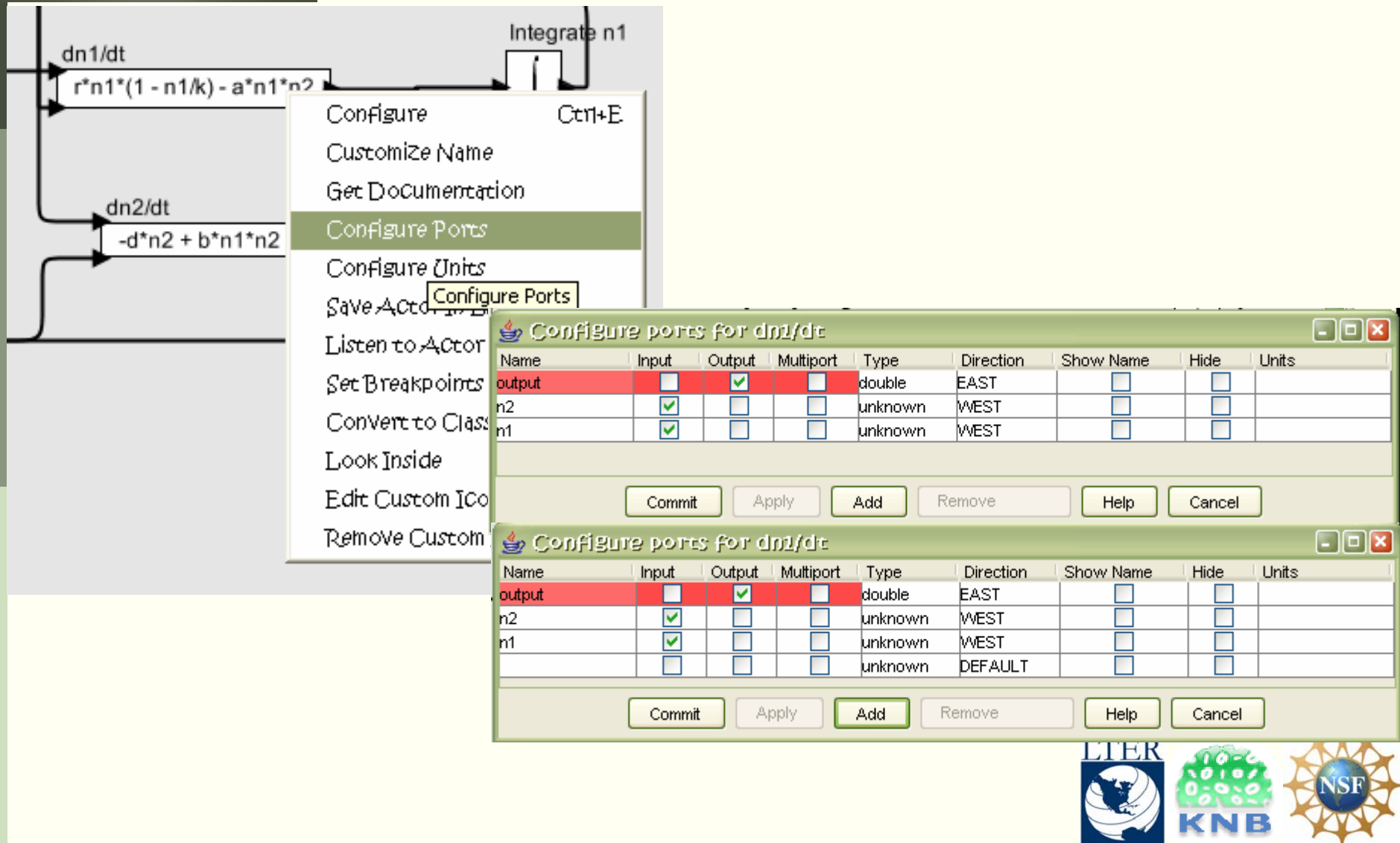


  - One to connect actors within workflows



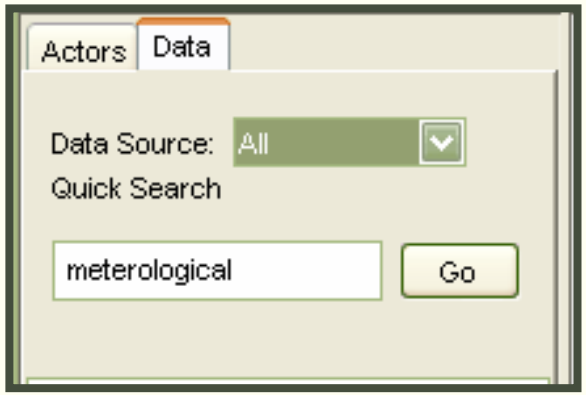


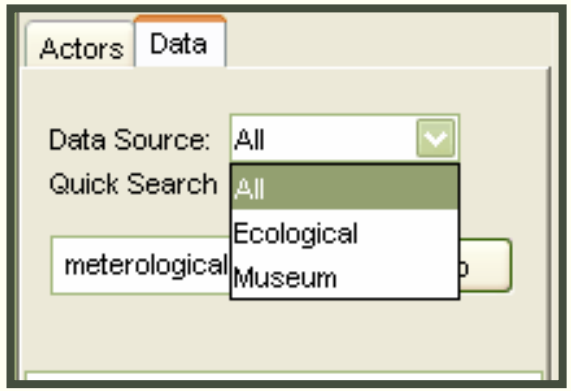
Adding ports to actors



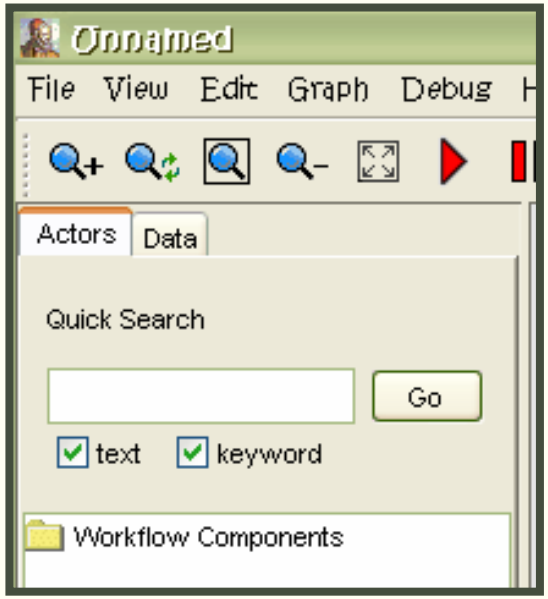
Searching

- Data

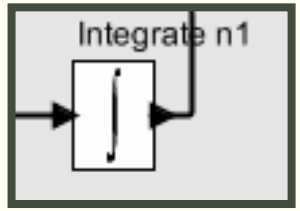




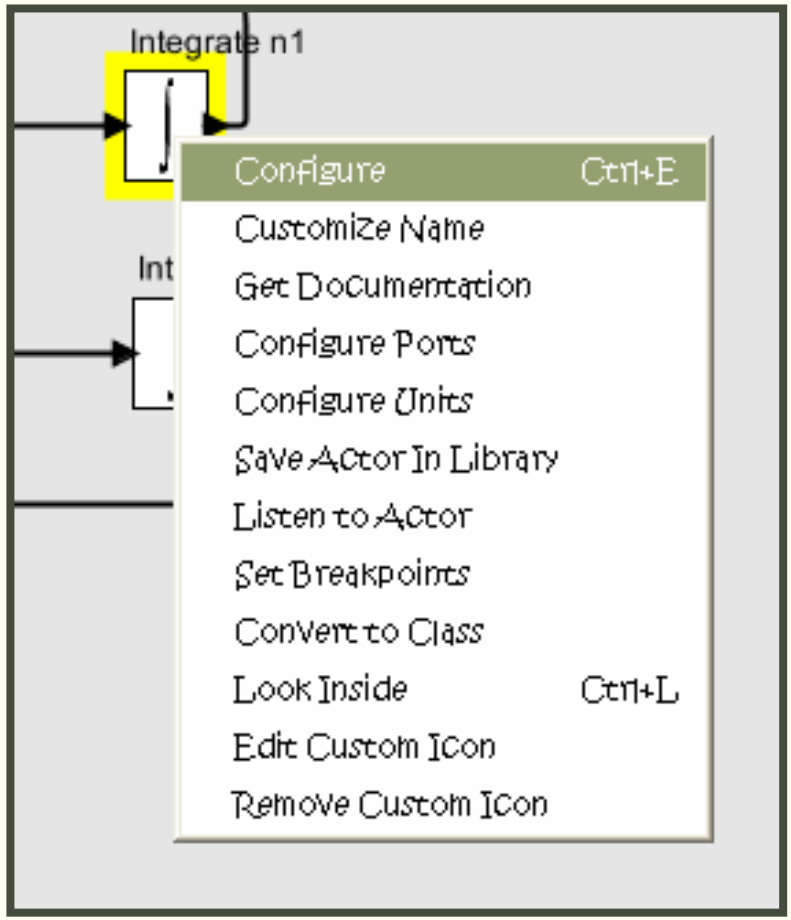
- Actors
- Directors



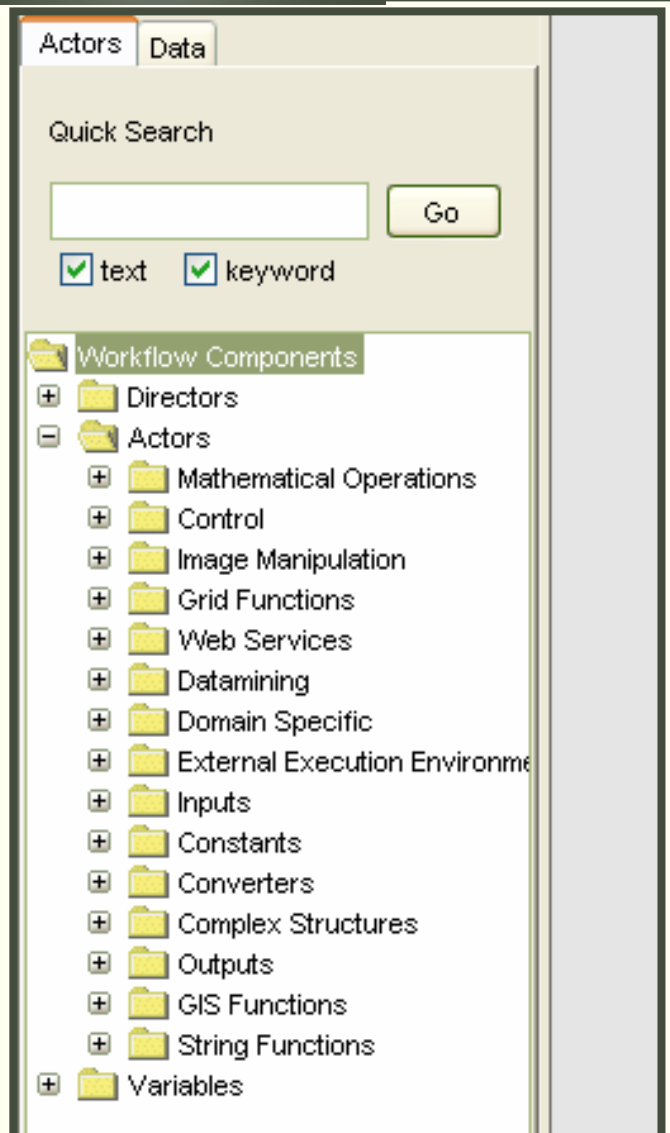
Actors



- Actors are components that execute and communicate with other actors in a model.

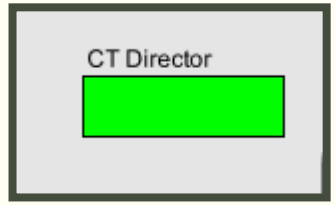


Actor Library

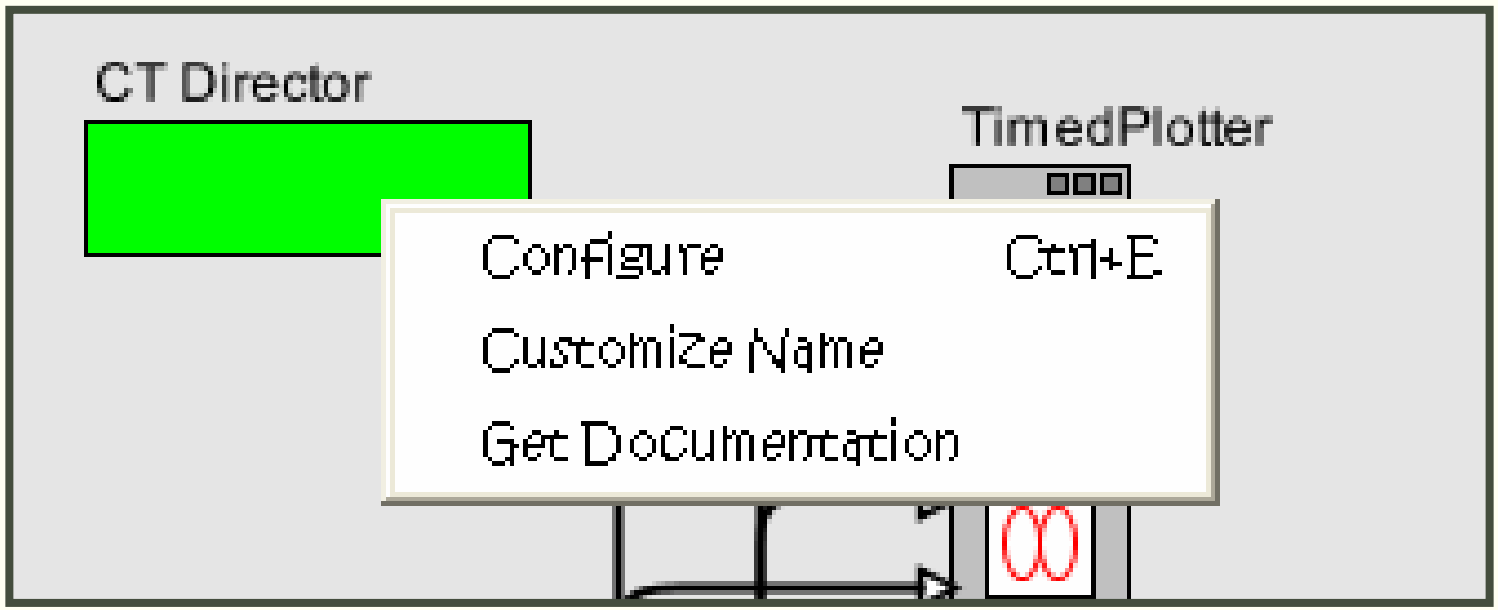


- Variety of Actors grouped based on the type of functions

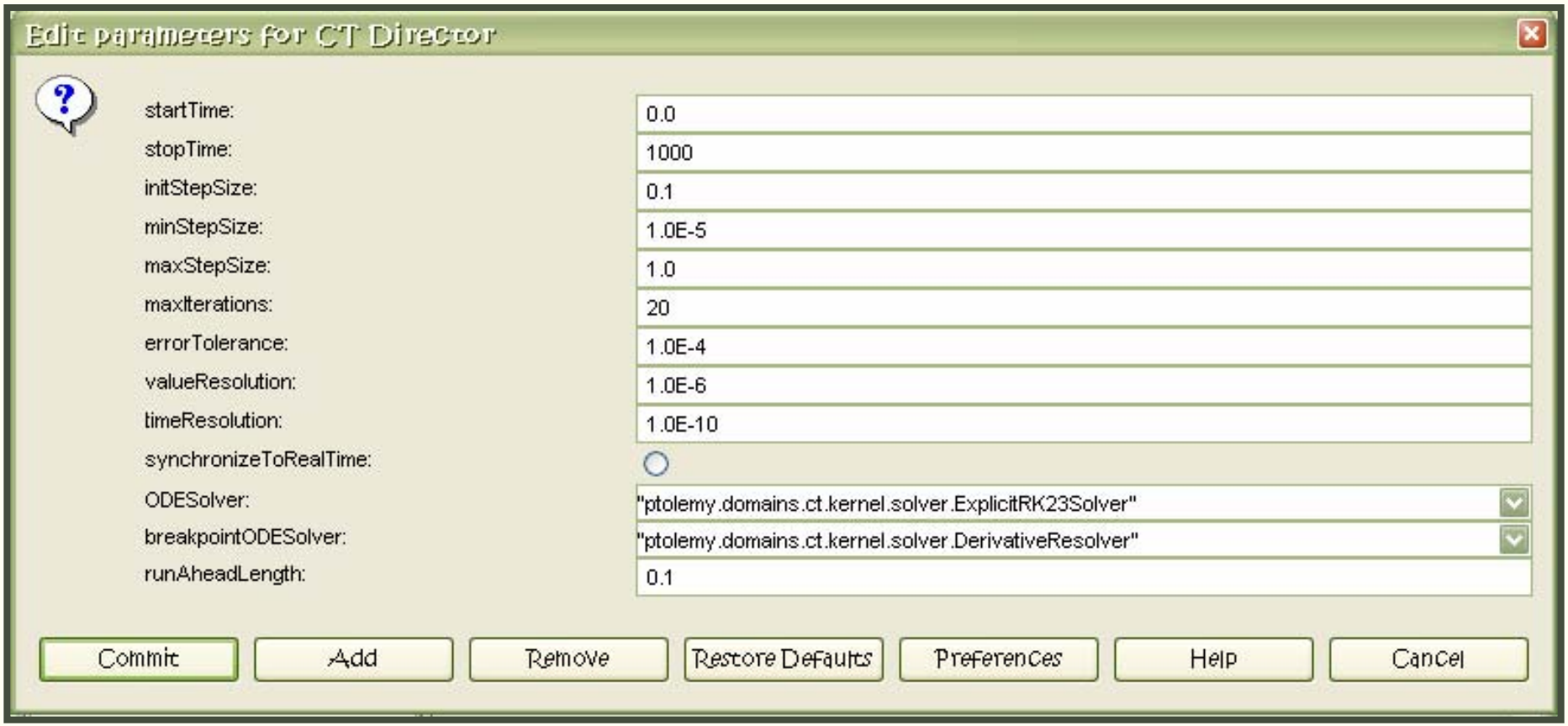
Director



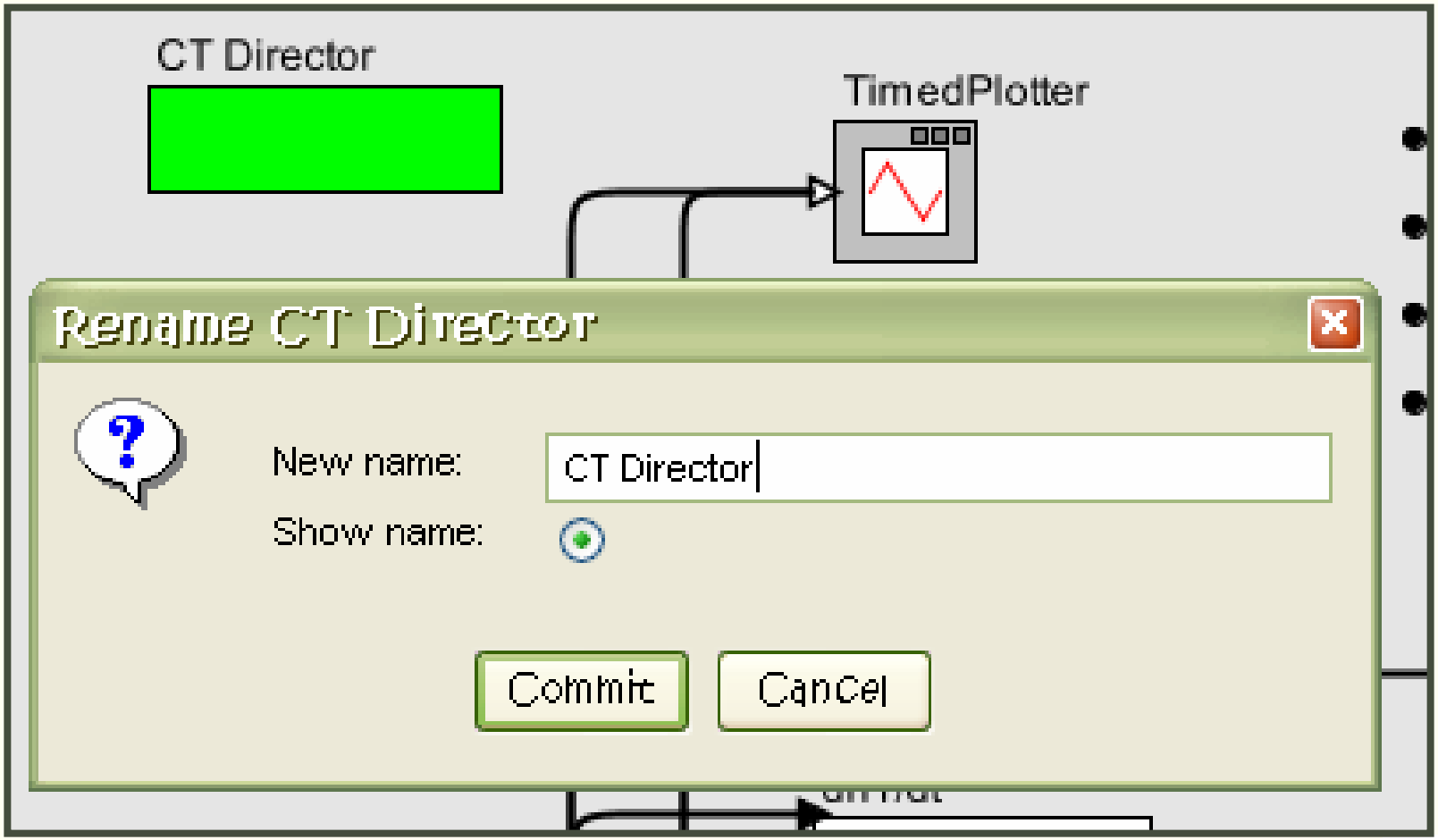
- Governs the execution of a workflow.



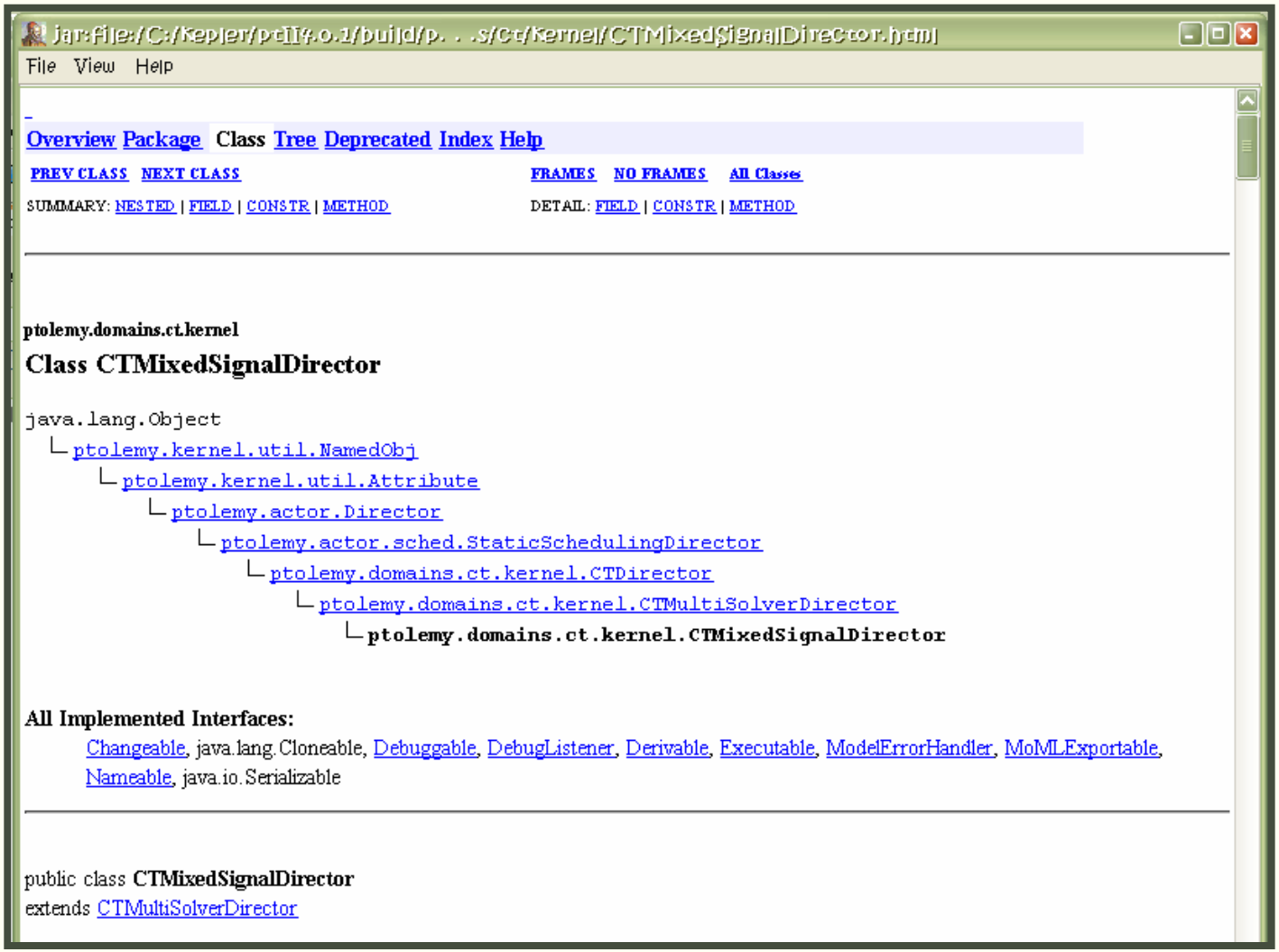
Configuring the Director



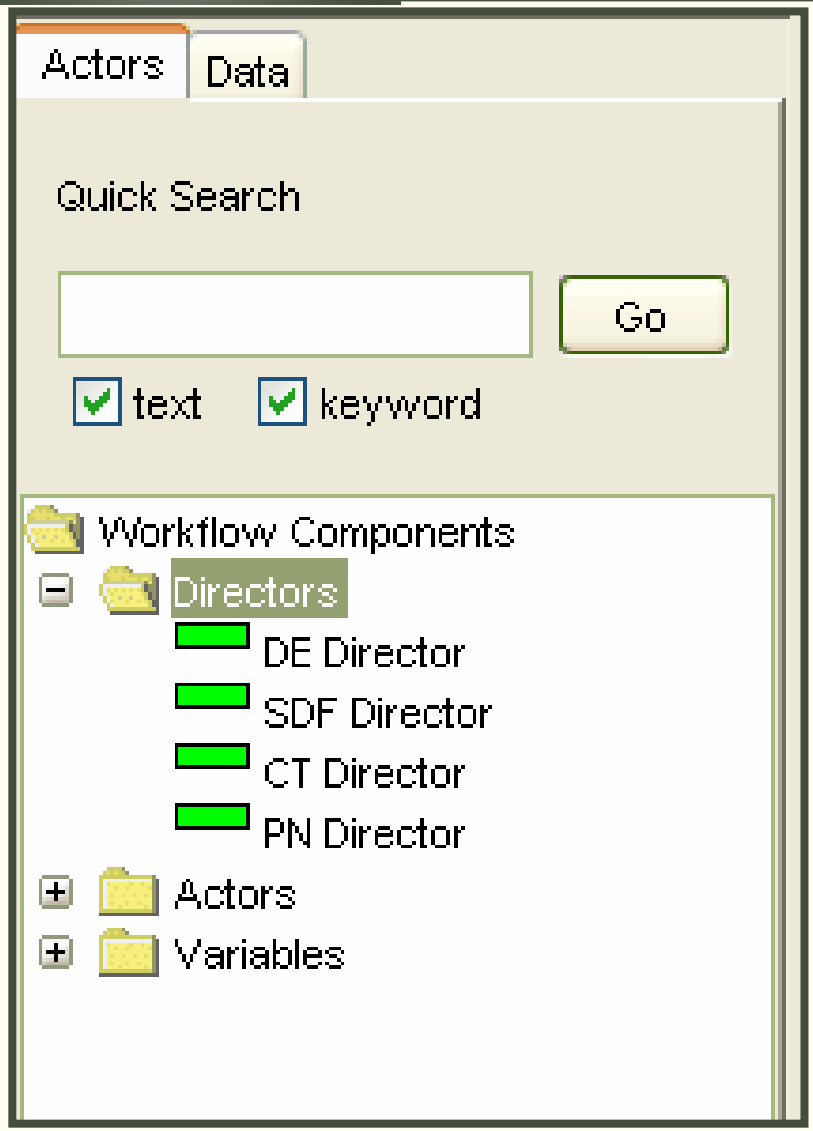
Renaming the Director



Get documentation



Director Library



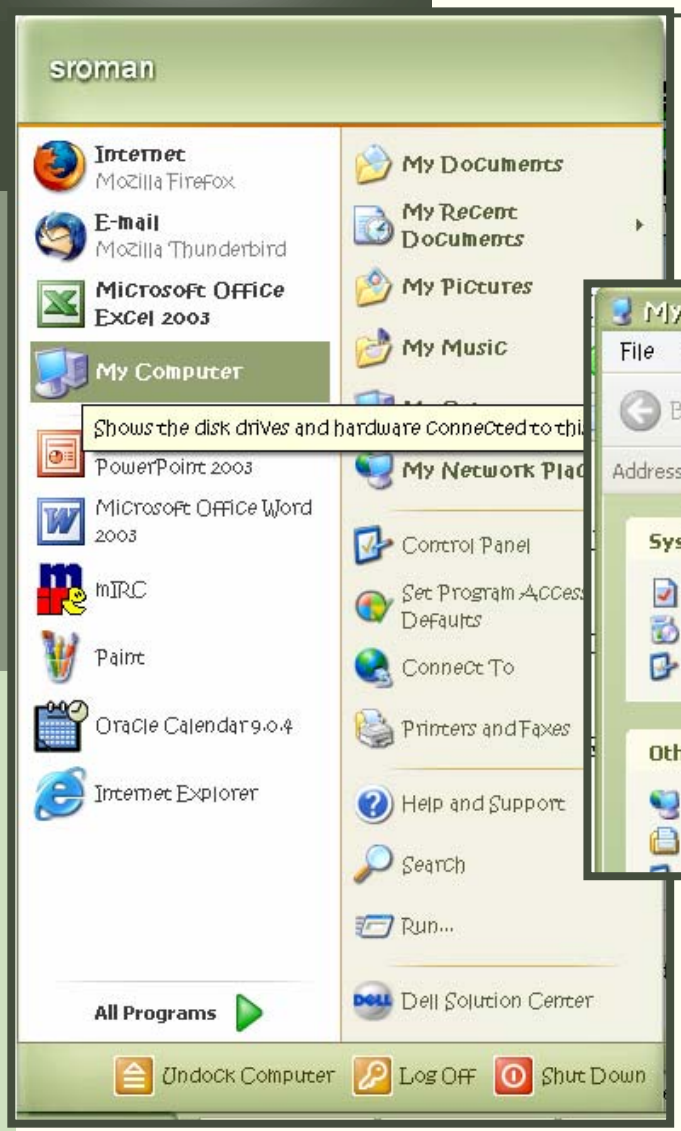
- A variety of directors depending upon the type of model being executed.

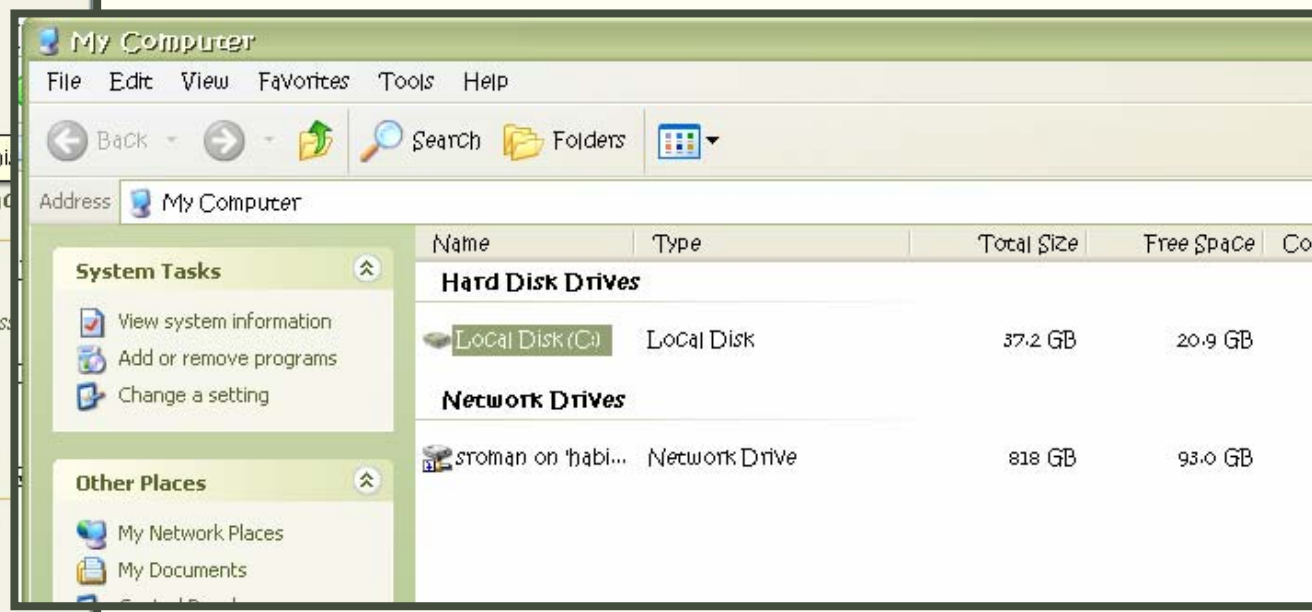
Using Kepler

- Executing a ready to run workflow
- Building a model
  - Choosing actors
  - Making connections
  - Choosing a director
  - Building composite actors
  - Saving and running the model

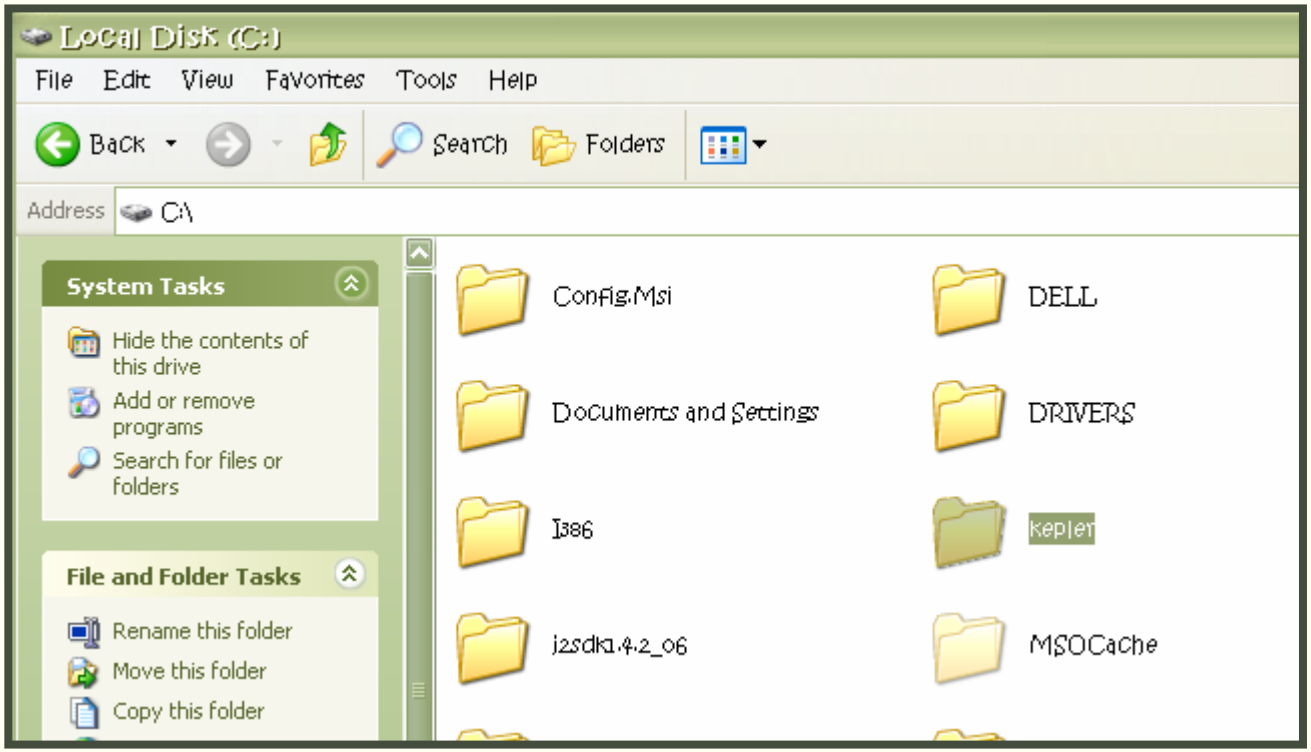
Open Kepler

- Click on my computer
- Then C Drive



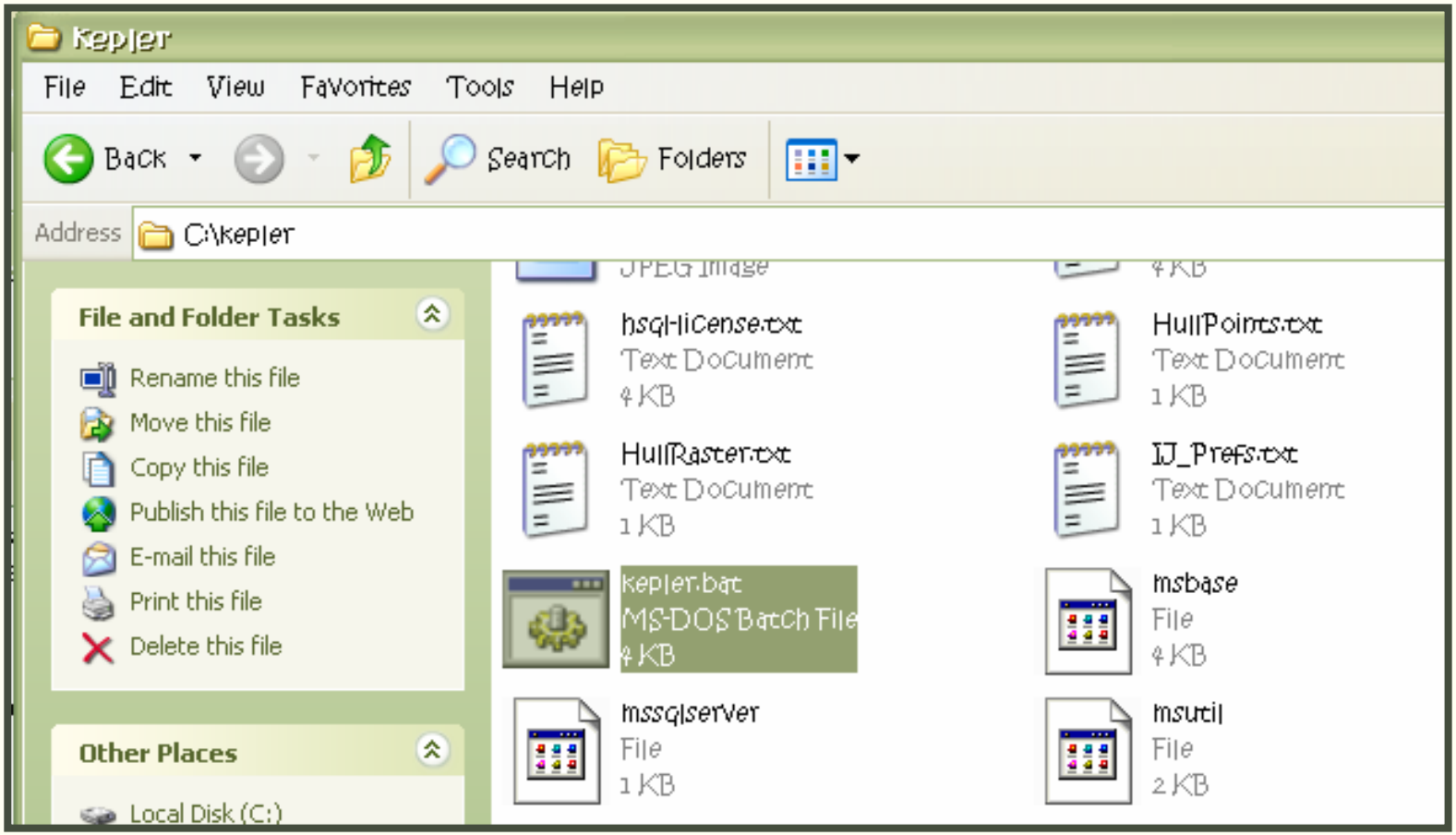


Opening Kepler



- Locate and open the folder Kepler

Opening Kepler



- Double click on Kepler.bat

Opening Kepler

- This is the Kepler software

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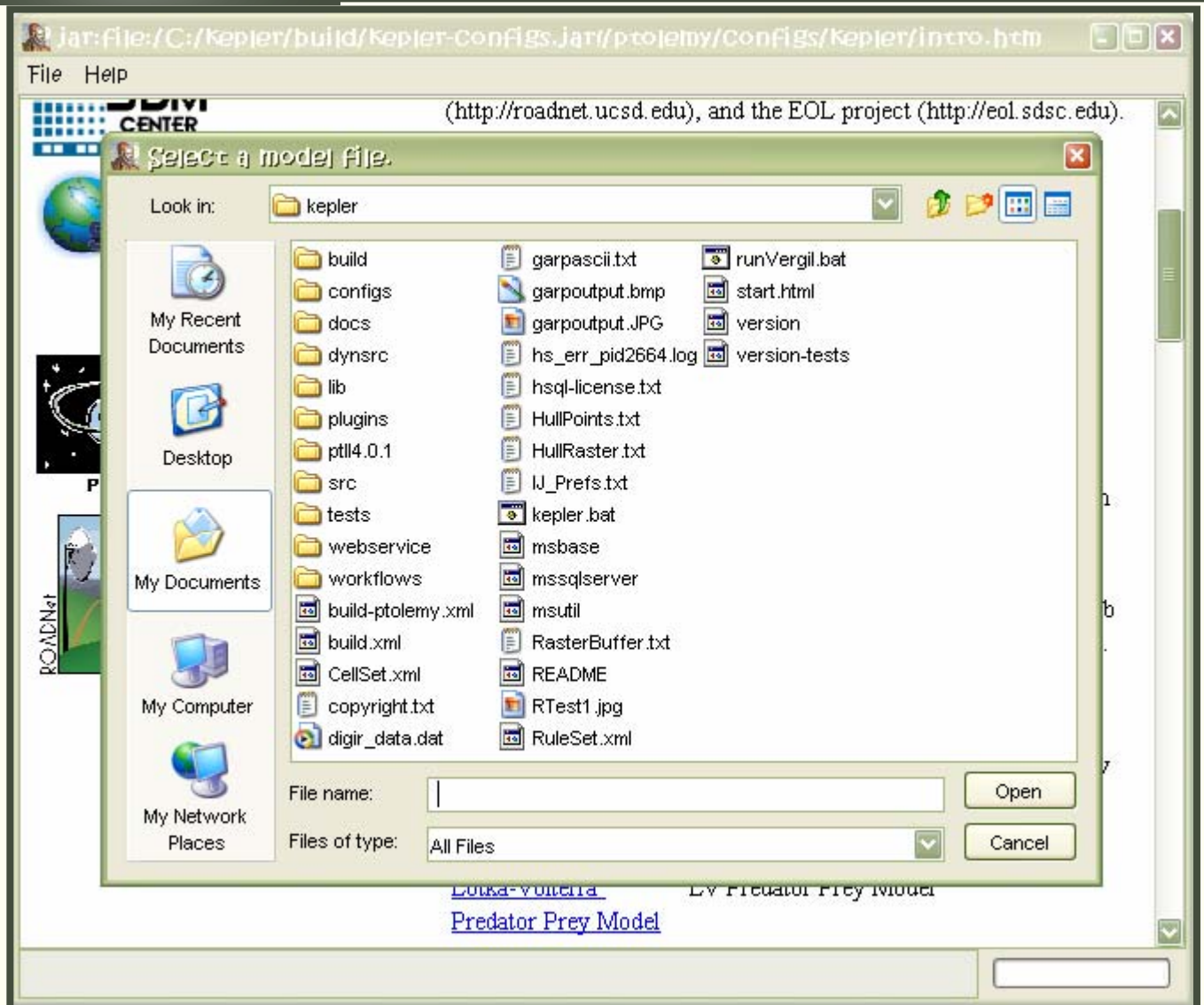
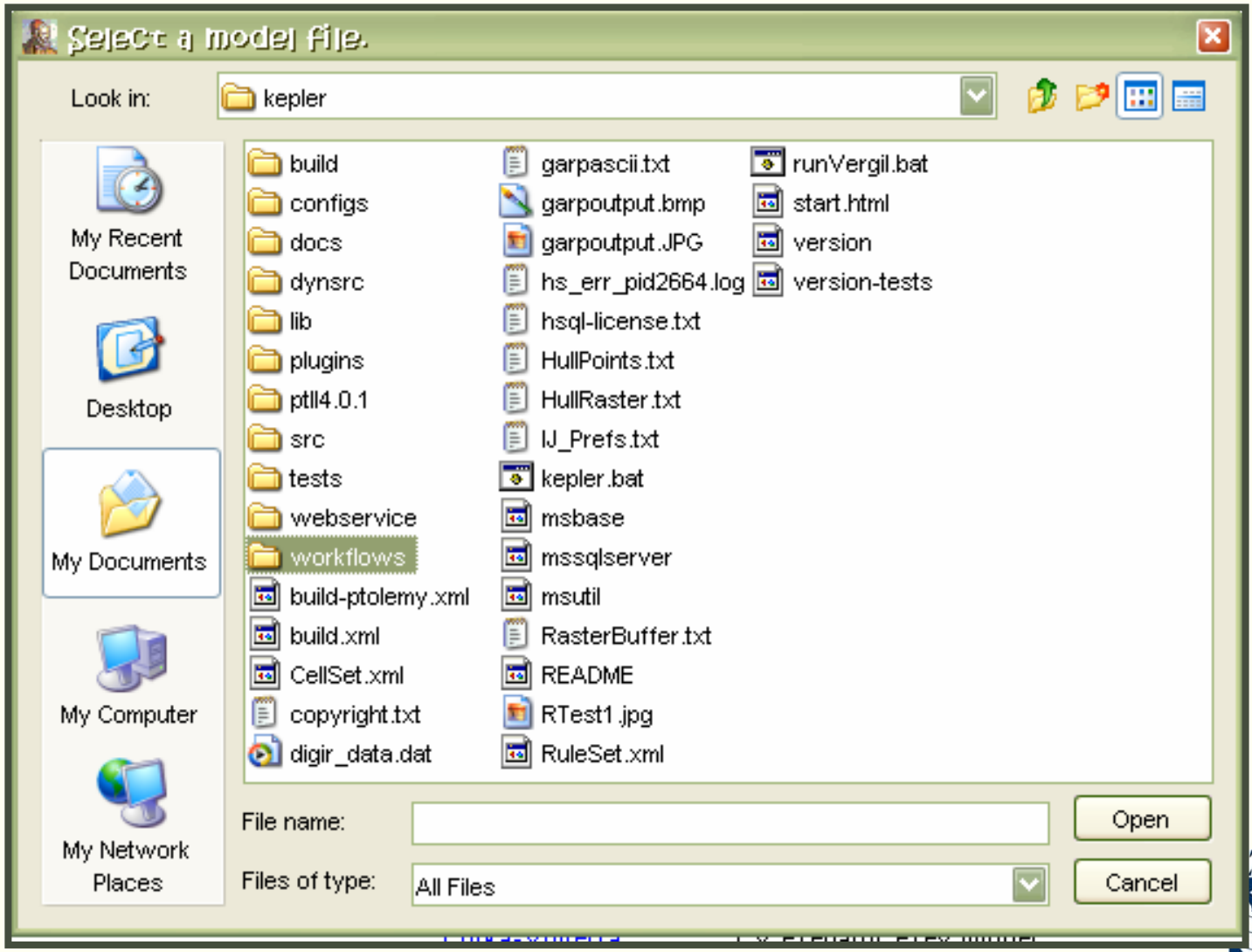
Opening the LV model

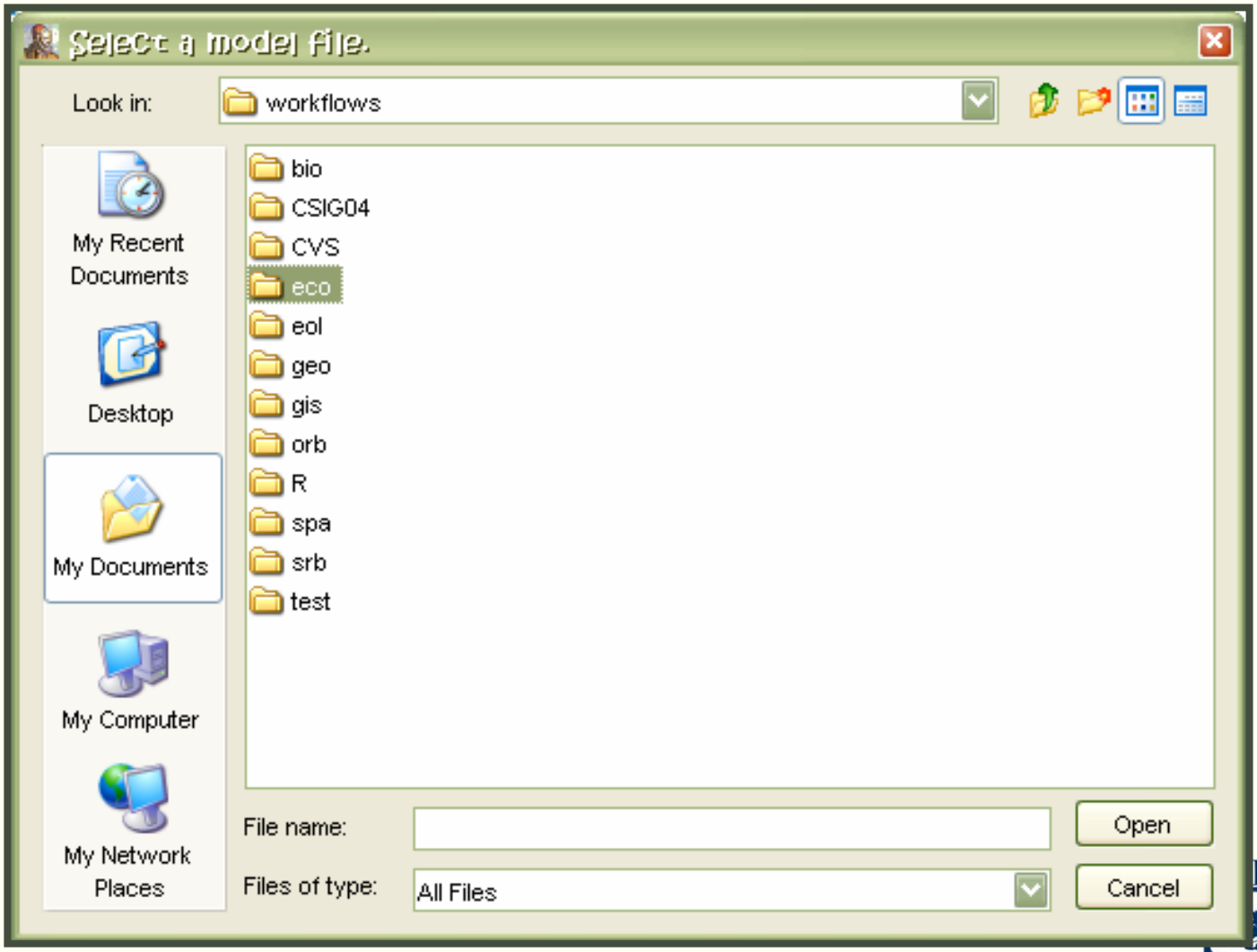
Open Kepler


jar:file:/C:/kepler/build/kepler-configs.jar!/ptolemy/configs/kepler/intro.htm
File Help
(http://roadnet.ucsd.edu), and the EOL project (http://eol.sdsc.edu).
Select a model file.
Look in: kepler
My Recent Documents
Desktop
My Documents
My Computer
My Network Places
build
configs
docs
dynsrc
lib
plugins
ptII4.0.1
src
tests
webservice
workflows
build-ptolemy.xml
build.xml
CellSet.xml
copyright.txt
digir_data.dat
garpascii.txt
garpoutput.bmp
garpoutput.JPG
hs_err_pid2664.log
hsql-license.txt
HullPoints.txt
HullRaster.txt
IJ_Prefs.txt
kepler.bat
msbase
mssqlserver
msutil
RasterBuffer.txt
README
RTest1.jpg
RuleSet.xml
runVergil.bat
start.html
version
version-tests
File name:
Files of type: All Files
Open
Cancel
Predator Prey Model

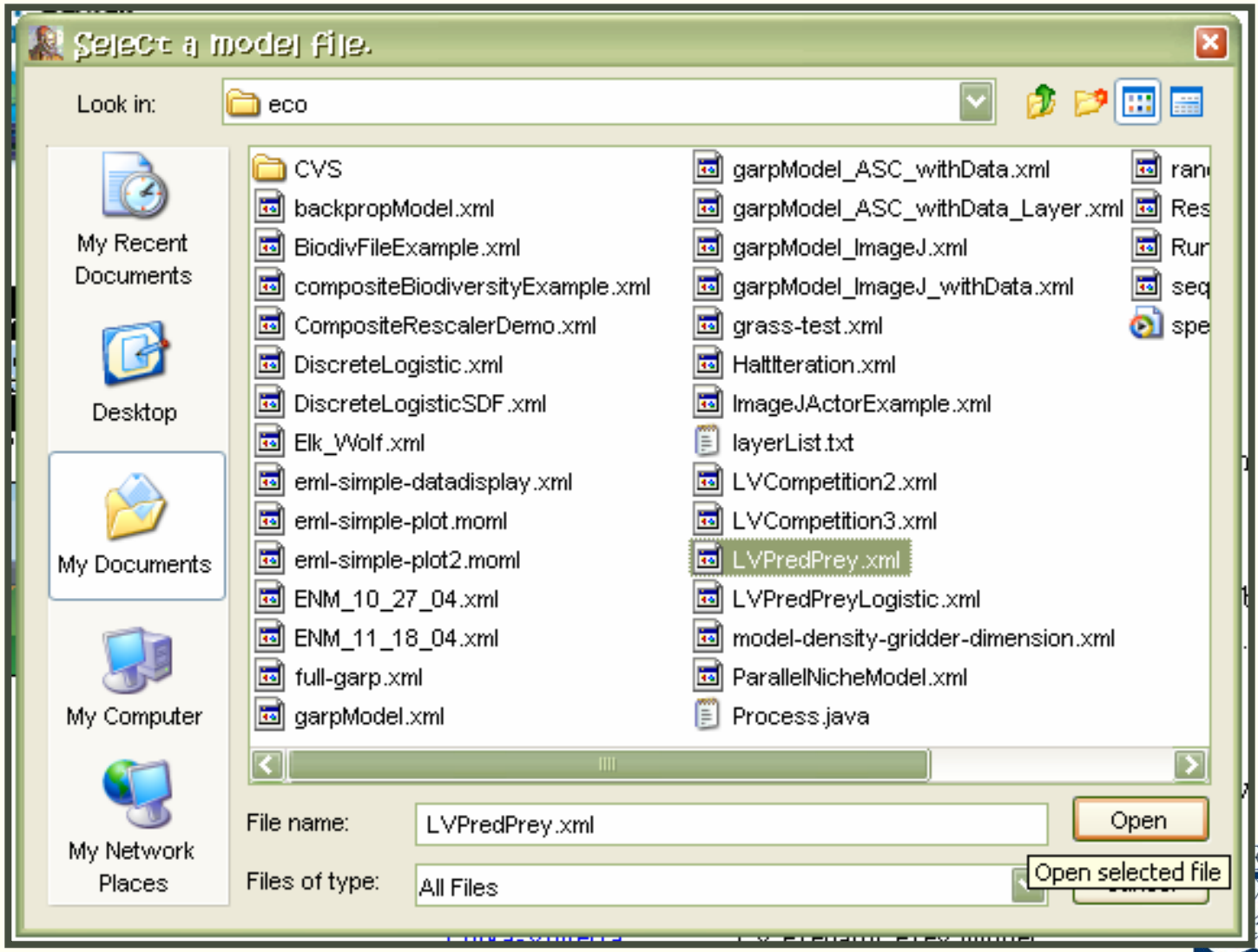
Open workflows



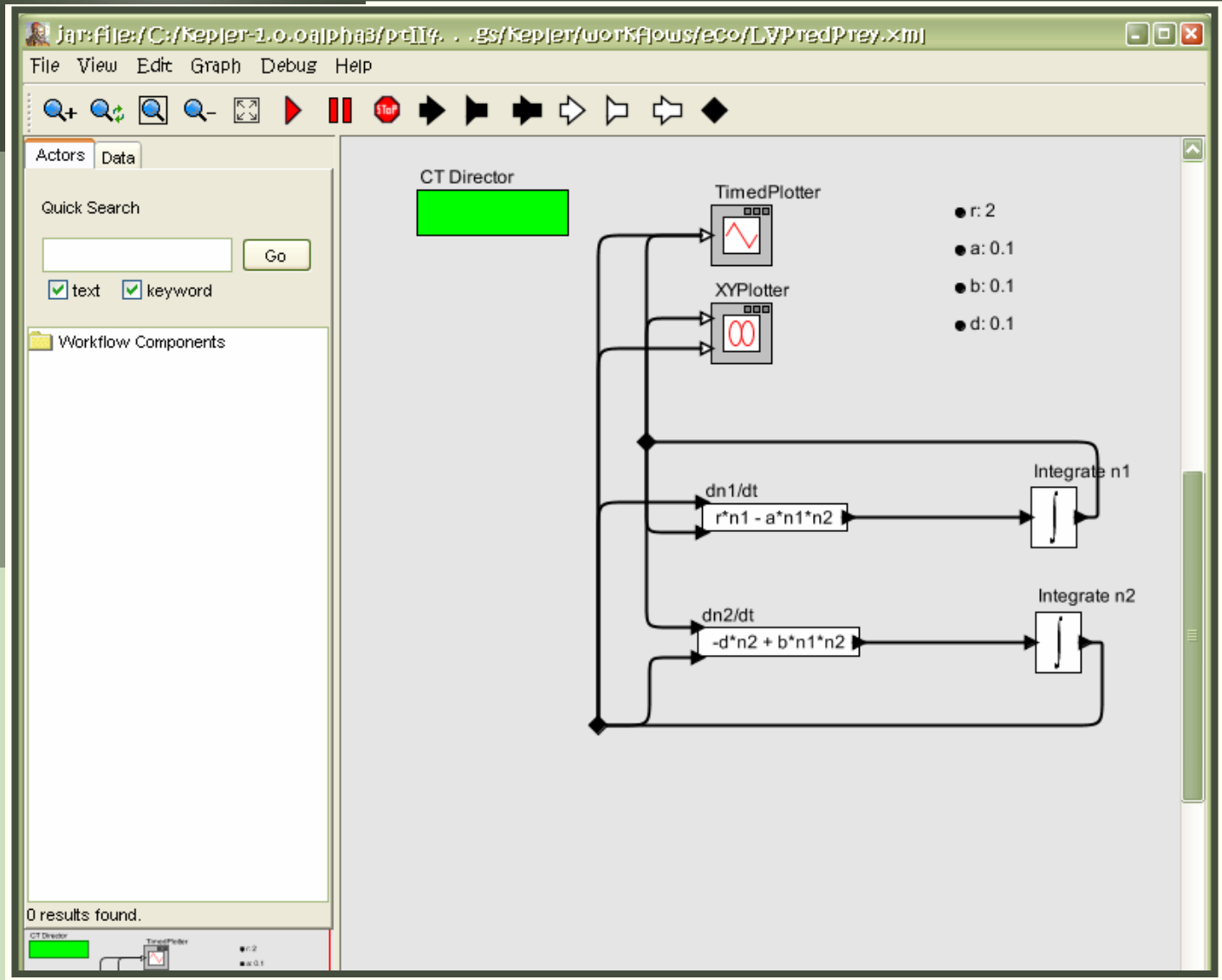
Open the eco folder



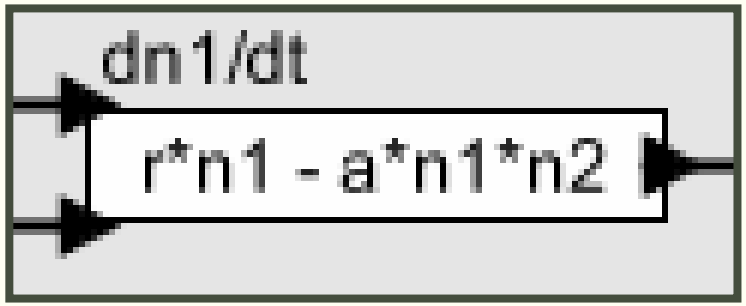
Open LVPredPrey.xml



Lotka-Volterra Predator Prey Model

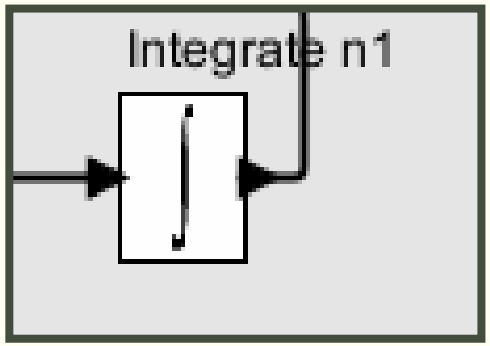


Actors

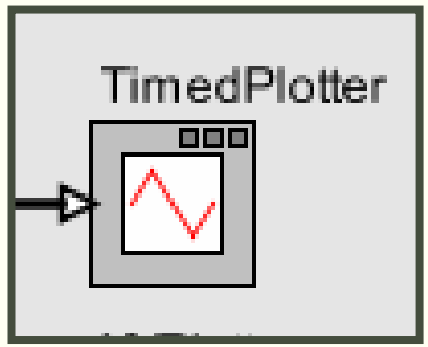


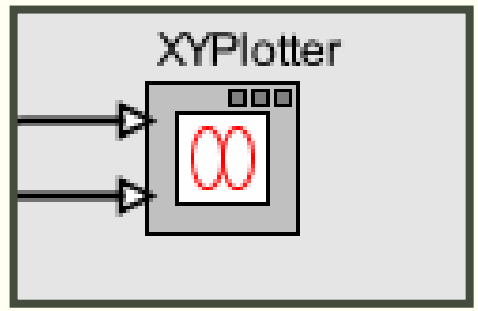
- The population growth of species 1 (prey)

- The population growth of species 2 (predator)

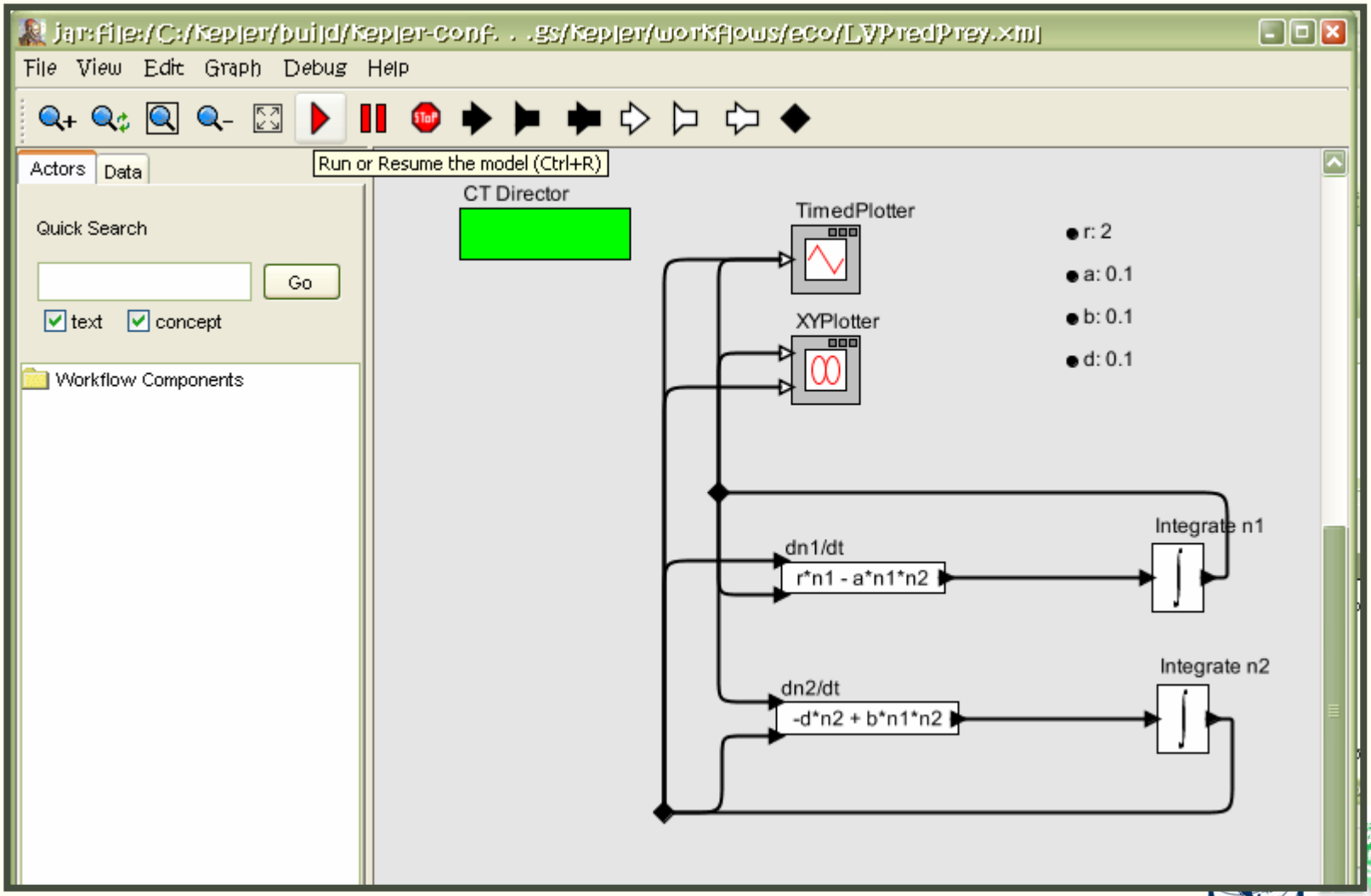


- Integral

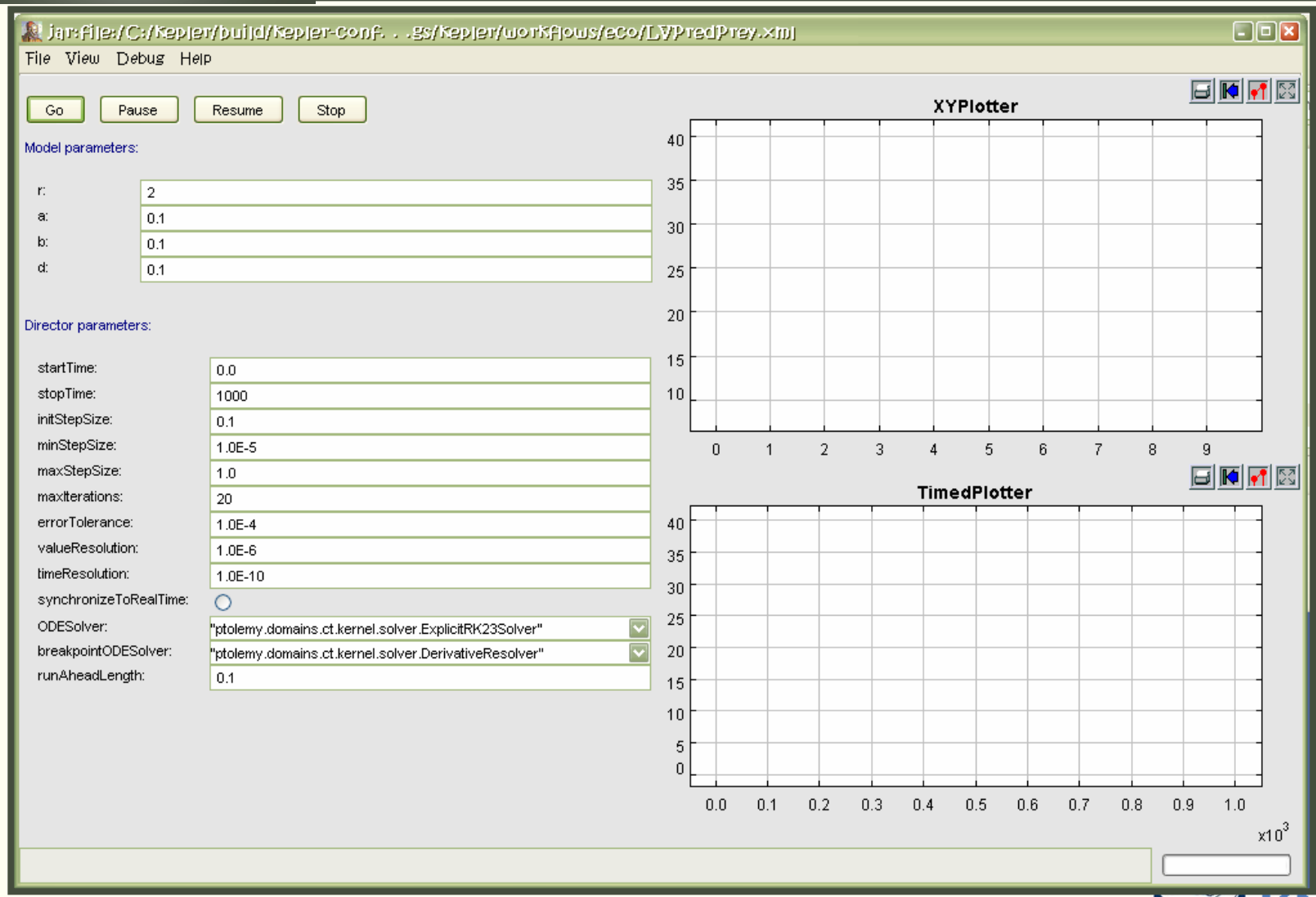




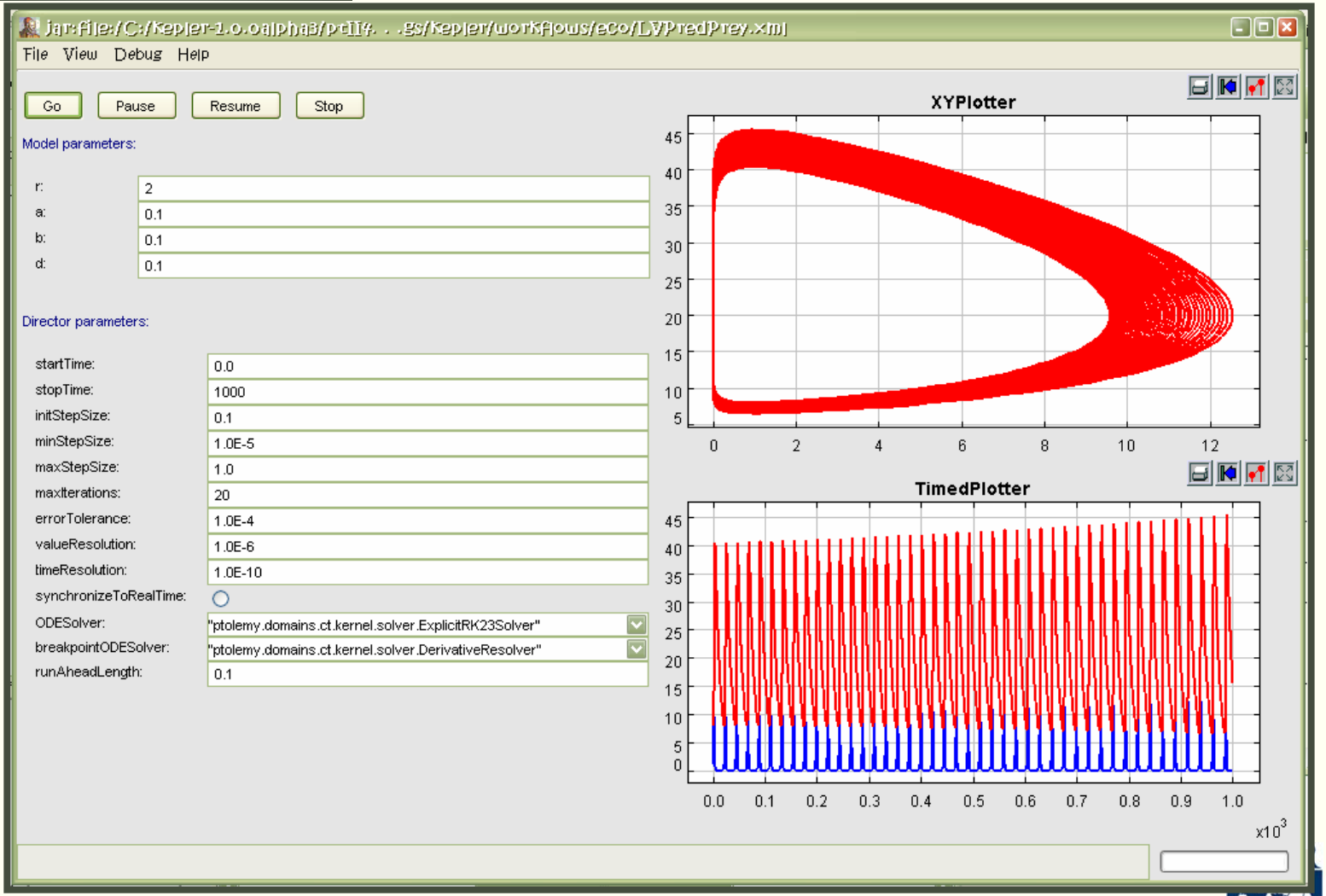
Running the model



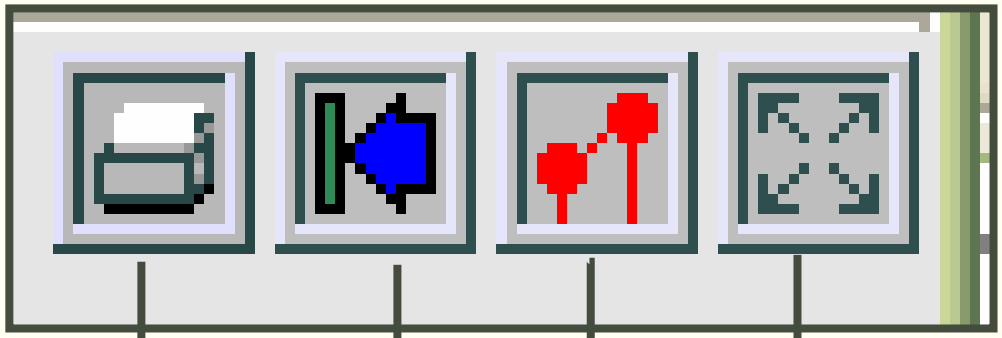
Running the model



Running the model



Plotting Tool bar



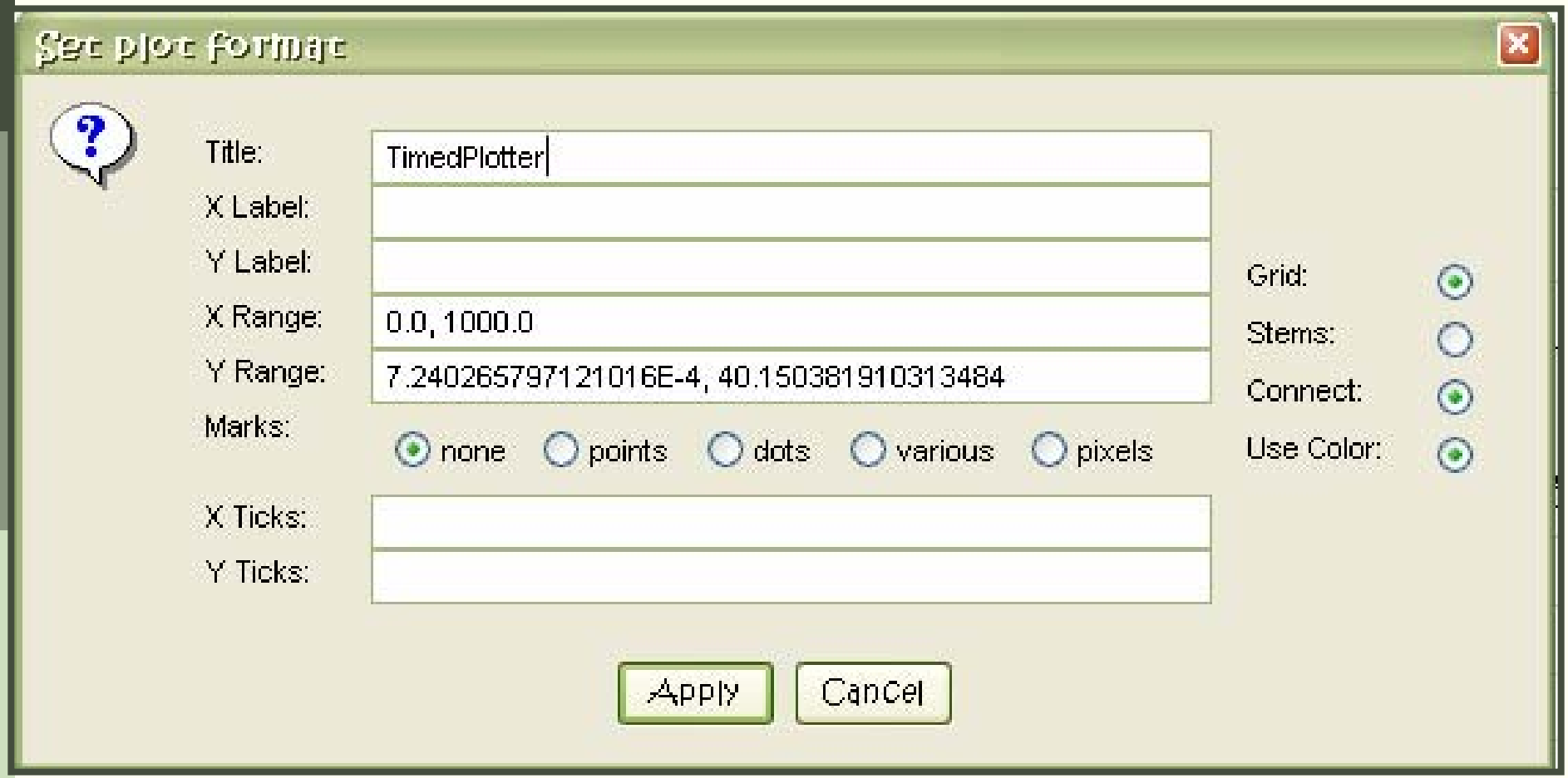
printing

Reset X and Y ranges to their original values

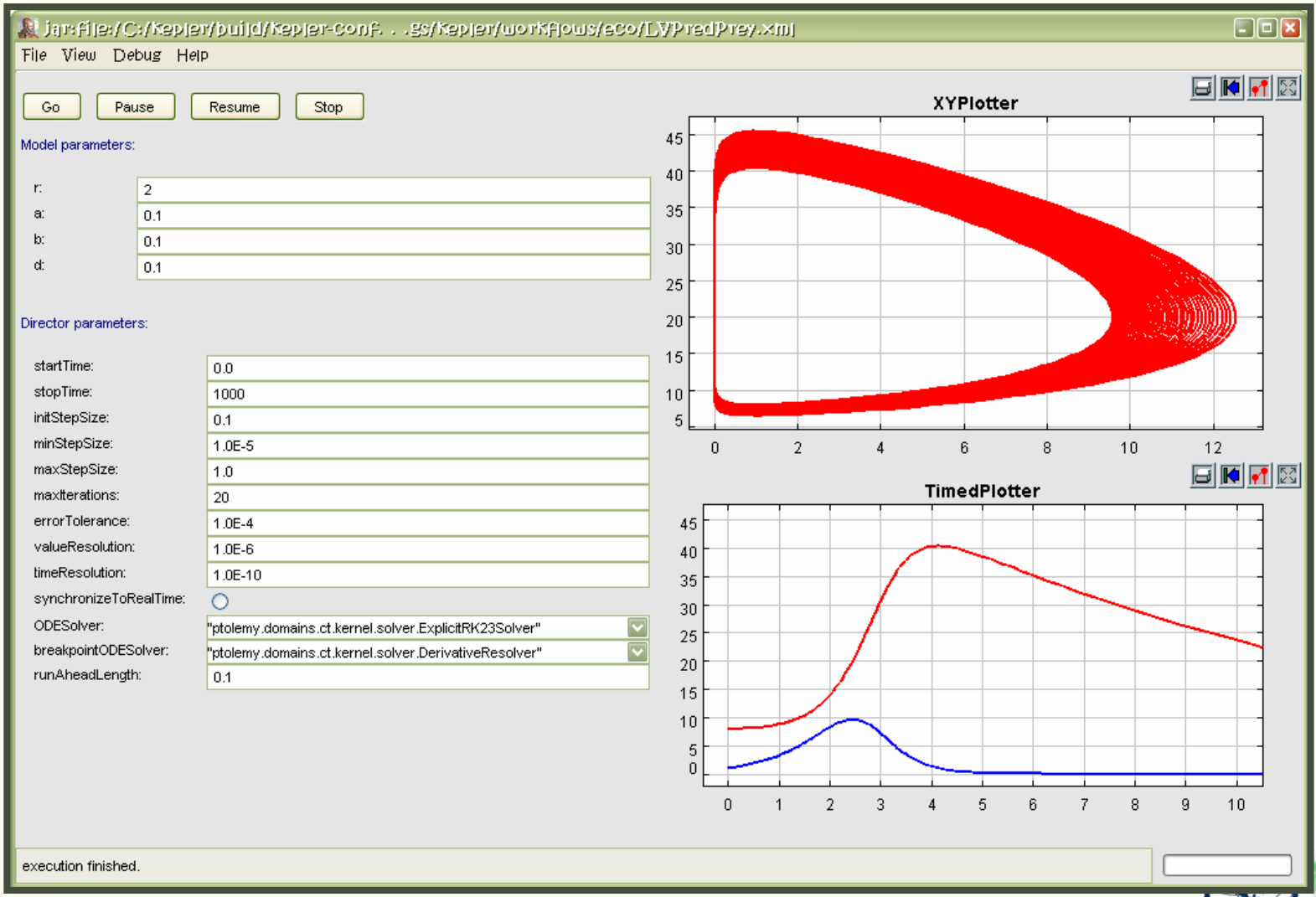
Set plot format

Rescale plot to fit the data

Setting the Plot format

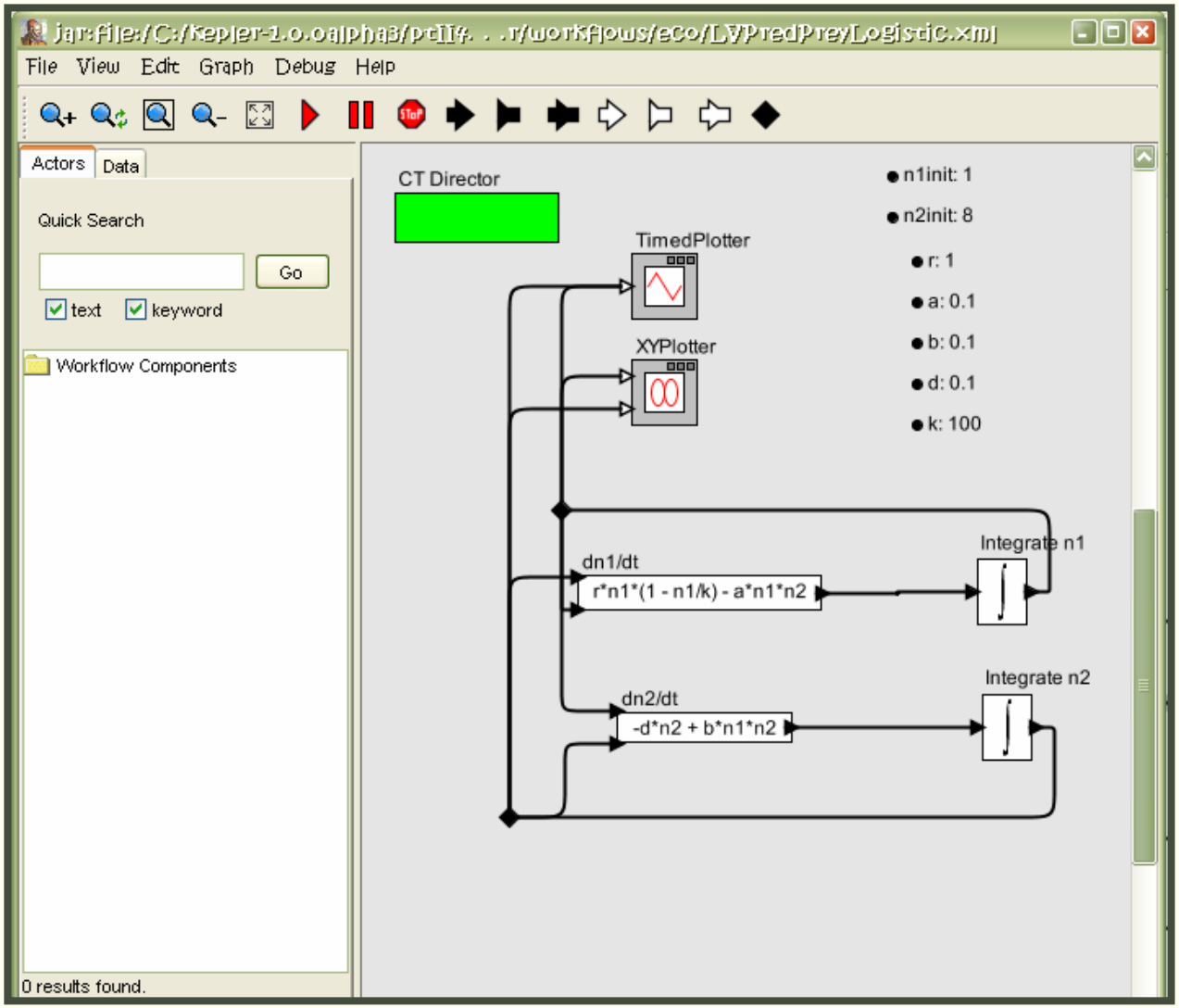


Running the model

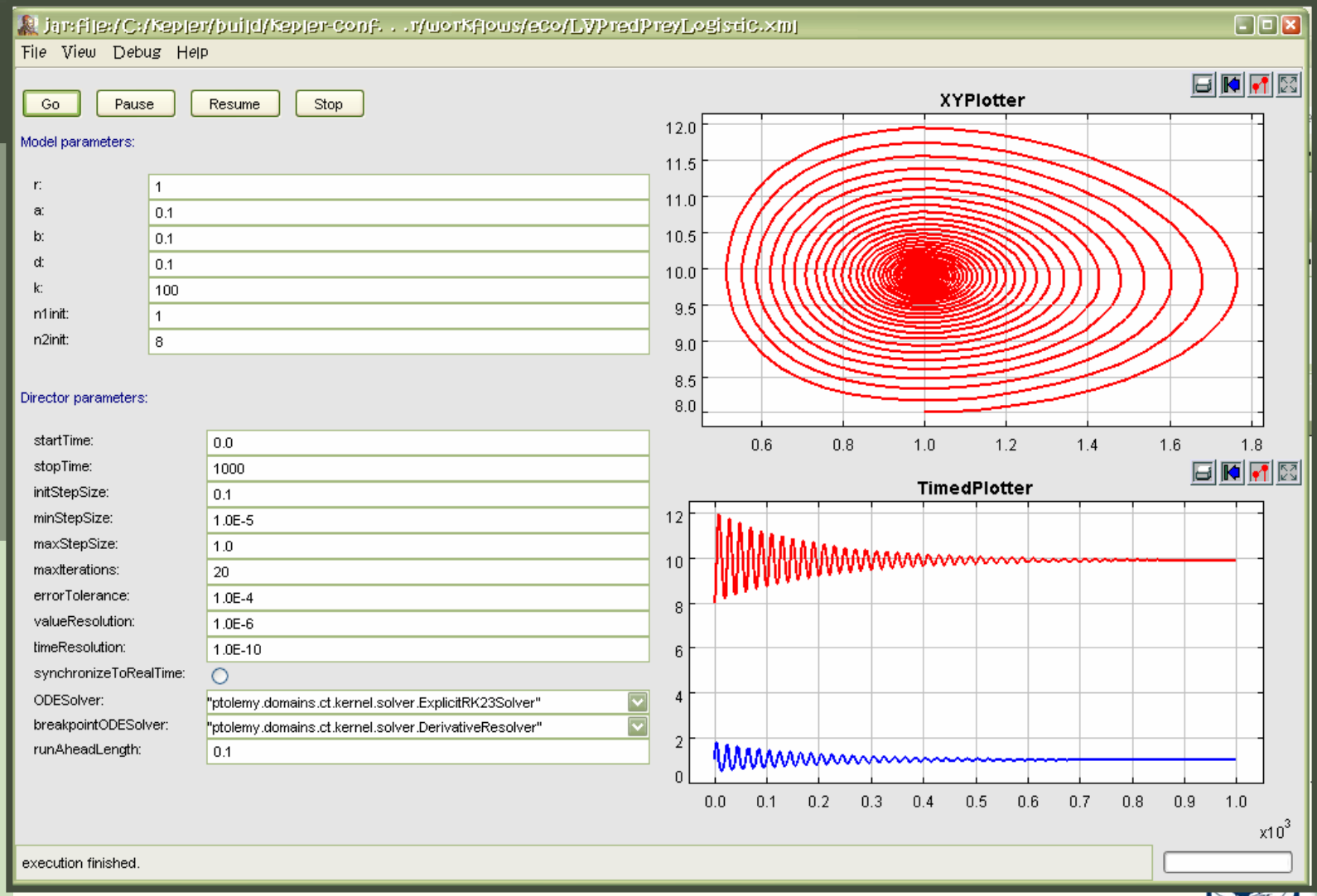


Opening the LV logistic model

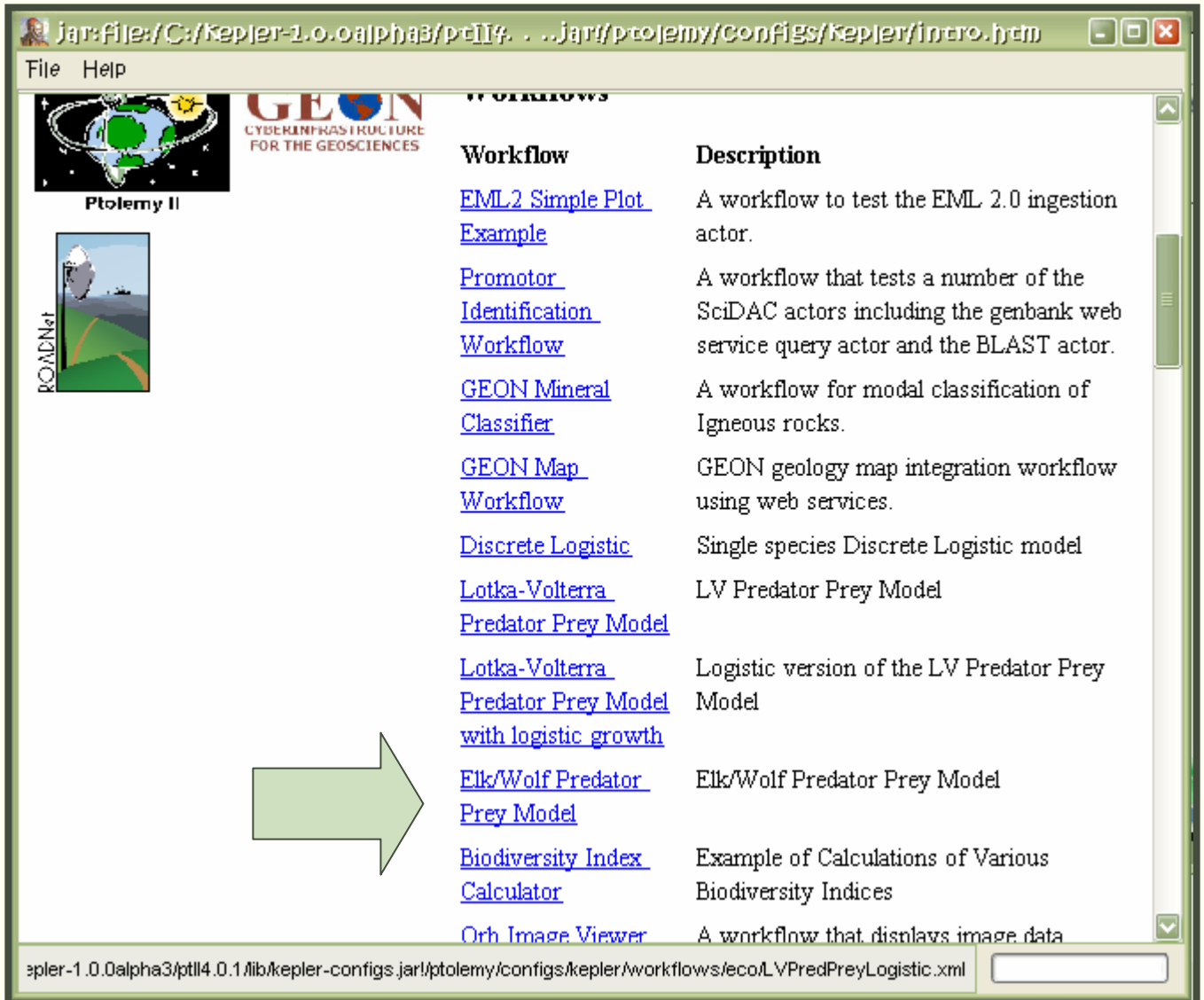
Lotka-Volterra Predator Prey Model with logistic growth



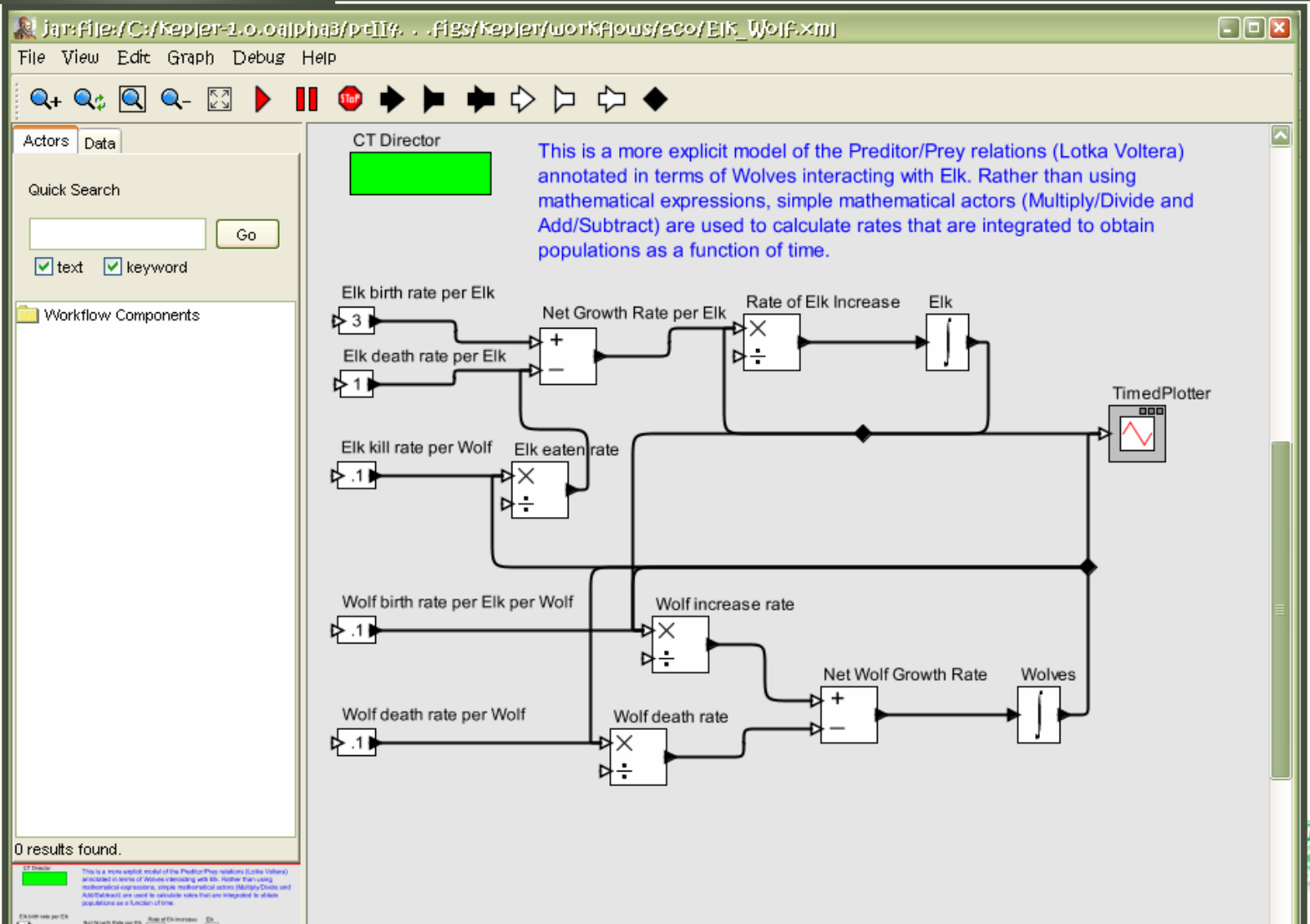
Running the model



Opening the Elk/wolf model



Elk/Wolf Predator Prey Model



Running the model