

Work flow tools

Morpheus has a number of nifty tools to optimize your work flow from model development to high performance computing.

Here, we present some use cases that use these features.

Model development and testing

Copy / paste between models

Multiscale modeling often involves the integration of existing models. For example, combining an existing cell-based CPM model (CPM.xml) with an ODE model (ODE.xml) regulating, say, the cell cycle of each cell.

Morpheus lets you copy and paste parts of a model between different documents.

This allows you to copy the System from ODE.xml containing the ODE equations and parameters (right-click → Copy). And then paste it inside the CellType element in the CPM.xml document (right-click → Copy).

You can only paste elements in appropriate places, otherwise it will be greyed out. This ensures the validity of the model.

All copied elements are shown in the Clipboard.

- Disabling / enable model components
- Interactive mode

Simulation and execution

- Image-based modeling
- Checkpointing
- In silico experiments

Parameter exploration

- Spatial parameter sweep
- Parameter sweeps
- Analysis of parameter sweeps

Analysis

- Logging and plotting raw data
- Frequency distributions / Histograms
- Colors / Labels / Arrows
- TIFF hyperstacks

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