Pirana

The flexible modeling environment for NONMEM

Quick Guide: Working with, running and manipulating controlstreams in Pirana

Version 1.1

Introduction

- All models and their associated results available in a folder in Pirana are depicted in the main Window.
- When selecting a model and using the right mouse-button menu, a range of actions may be performed on the selected model.
- Most manipulations (duplicating, removing, etc.) of models are available via the sub-menu **Actions** (Figure 1).

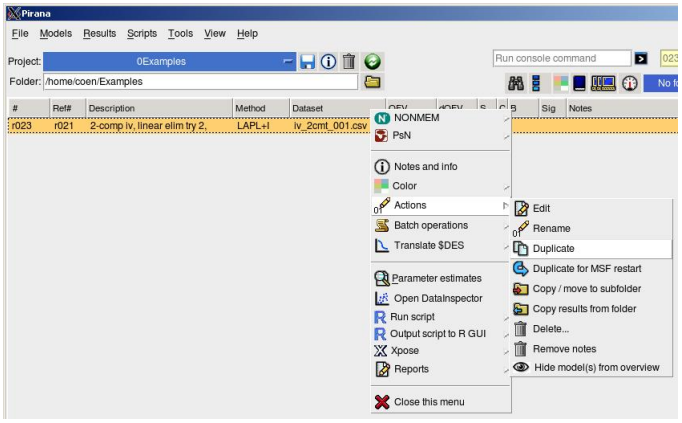

Figure 1: Pirana window with context menu

Running a model

- Select the model and open the right-mouse button context menu.
- Select the preferred methode of running the model, i.e. NONMEM $\rightarrow$ nmfe, or PsN $\rightarrow$ execute.
- If you are using nmfe to run a model, NONMEM has to be registered within Pirana first (refer to the Quick Guide on installing NONMEM). If PsN is installed, Pirana will automatically recognize this.

Running a model using nmfe

After having selected Run via nmfe, the Run window depicted in Figure 2 will appear. A number of options are available here, before executing the run.

- **NONMEM**: The preferred NONMEM installations may be selected.
- **Run in seperate folder(s)**: A NONMEM run may be executing in a sub-folder, to enable to run multiple runs simultaneously. Results from a subfolder can be imported to the main folder in Pirana.
- **Run in background**: No console window is opened, the model is run in the background.
- **Clusters-Submit to SGE**: Run on a cluster using SGE (optional).
- **Clusters-Parallelization**: Run using parallelization available in NONMEM 7.2 (optional).
- **Connect to**: Cluster (optional). Connect to a cluster. Please refer to the Quick Guide on Clusters for more information.
- **Script contents**: The script which is executed to run the model.
- The run may be executed using the $>$ button.

Running a model using PsN

After having selected Run via PsN, the PsN run window depicted in Figure 3 will appear. Again, a number of options are available here, before executing the run.

- **Cluster**: Cluster to connect to (optional). Please refer to the Quick Guide on Clusters for more information.
- **NONMEM**: The preferred NONMEM installations may be selected.
- **Run in background**: After executing the model, output is not printed to the screen.
- **PsN command line**: This is the command line which is executed. Additional PsN arguments may be added here.
- The top part of the window shows an overview for of available PsN arguments.

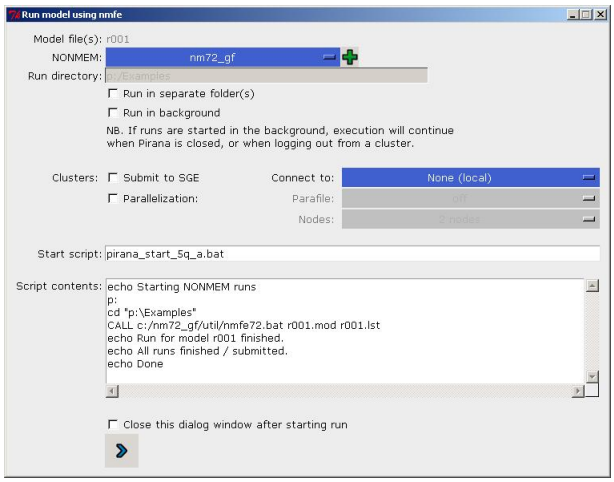

Figure 2: Run window for nmfe

Generating an empty control stream

- An empty control stream may be generated via Models → New model (Figure 4).
- Choose the template control stream that you want to use.
- The control stream will be opened in the text editor defined in Settings.

Generating a new control stream using the Wizard

- Empty, partly pre-coded PK models may be generated using the Wizard (Tools → Wizards).
- In the Wizards menu (Figure 5), select PK NONMEM model.
- After finishing the Wizard, a new control stream will be created and opened in the editor.

Editing a control stream

- A control stream visible in the main Pirana window may be edited by double clicking on the model.
- Alternatively, this may be done through the right-mouse button menu Actions → Edit.
- Please note that an alternative code editor can be defined through File → Settings → Software integration. The default in Pirana is notepad.exe, but it is highly recommended to change this to an appropriate code editor such as Emacs, ConText, or PSPad.

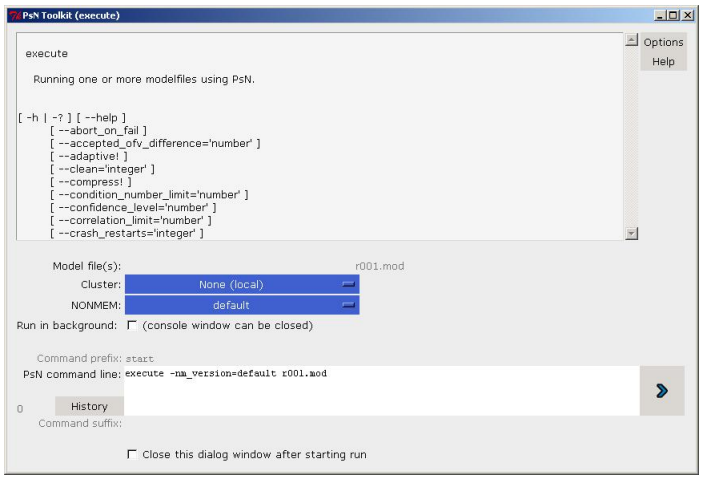

Figure 3: Run window for PsN

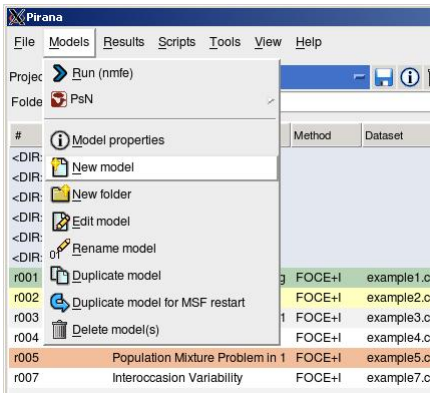

Figure 4: Create an empty model

Duplicating a control stream

- A control stream may be duplicated through the right-mouse button menu Actions → Duplicate (Figure 1).
- In the resulting Duplication window (Figure 6), you can choose to update parameter estimates in the new file to the ones estimated for the current model, fix the parameter estimates, change the file numbers in $TABLE and $EST records.
- Please note that to correctly duplicate with updated parameter estimates, you are required to adhere to some coding guidelines, especially for the $OMEGA and $SIGMA blocks. See the Pirana manual for more information.
- After pressing the Duplicate button, a new model will be created and opened in the editor.

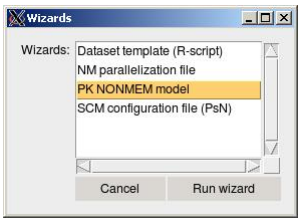

Figure 5: Create a new model using the Wizard

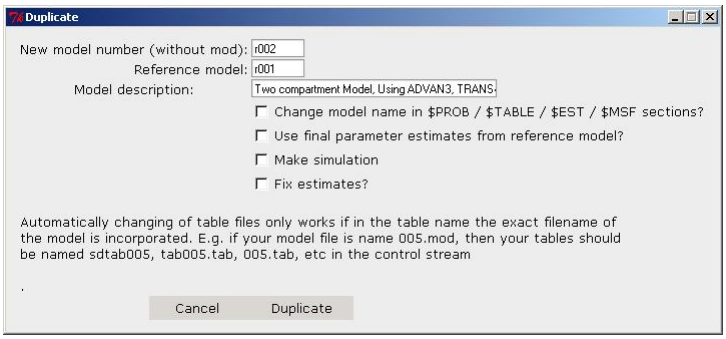

Figure 6: Create a new model using the Wizard

Renaming a control stream

- A control stream may be renamed through the right-mouse button menu Actions → Rename (Figure 1). Some of the same options as under duplication are available.

Deleting a control stream

- A control stream may be deleted by selecting the right-mouse button menu Actions → Delete (Figure 1). Alternatively, a can be selected and subsequently the keyboard button DELETE can be pressed.
- In the dialog that is opened, you can select what to delete: only the control stream (models), or also the associated results files, datasets. If you have selected one or more folders in the main overview to be deleted, the 'folder' option should be checked to actually delete these as well.

Viewing parameter estimates inside the GUI

- During model building, parameter estimates can be viewed by selecting a run, and opening the Estimates Tab on the right panel (Figure 7).
- The parameter estimates window can be opened from the option Parameter estimates in the context menu (right mouse button) (Figure 8), or alternatively from the button in the right panel with estimates.

- Results from the table can be exported to CSV, LaTeX or HTML, and different transformations of variances can be selected.
- When selecting multiple runs, parameter estimates can be compared with each other (Figure 9).

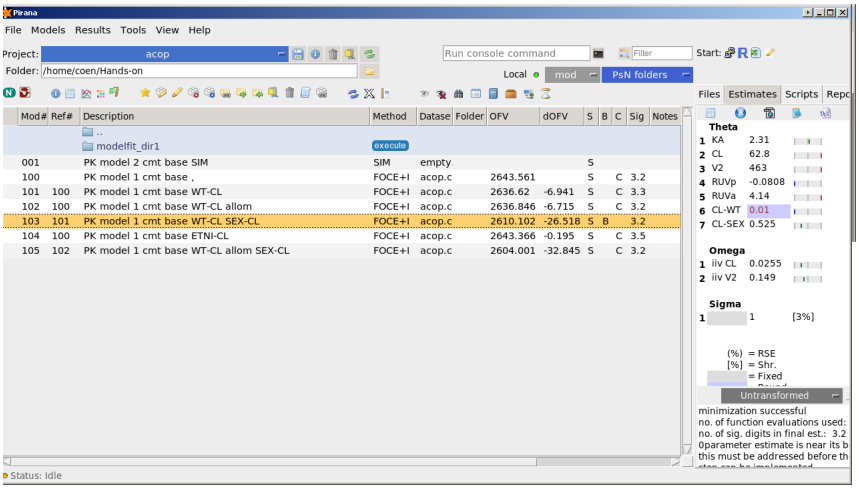

Figure 7: Viewing estimates in right panel in the Pirana GUI

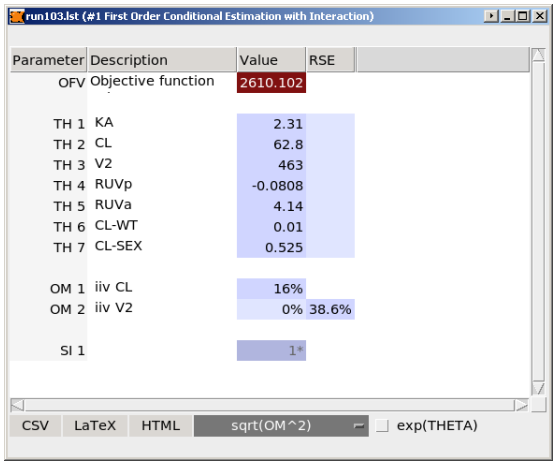

Figure 8: Parameter estimates window

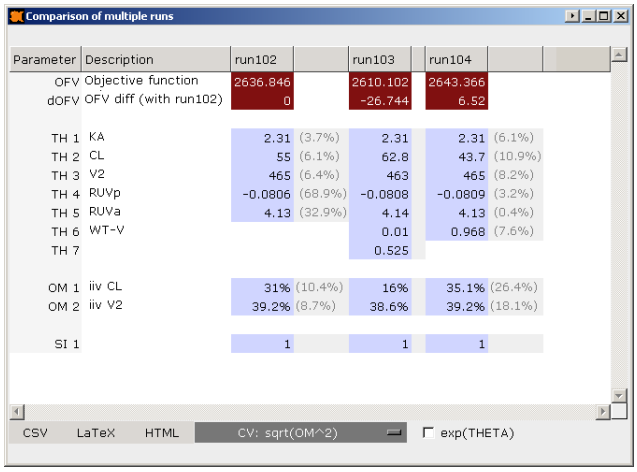

Figure 9: Parameter estimates comparison