



## How to start using 4C

Generating an executable of 4C is realized depending on the operating system (e.g.: WINDOWS: Microsoft Visual Studio with Intel FORTRAN compiler; UNIX/LINUX: Intel FORTRAN compiler).

### 1. DOS, WINDOWS with GUI

If a 4C-exe is available the following procedure must be performed if you work with DOS/ WINDOWS (command line).

#### A. To run the model:

- 1) Put the 4C.exe in a directory which also contains the folders called 'input' and 'output' folders.
- 2) Copy all relevant input files into the 'input' folder:
  - \*.sim
  - \*.cli or \*.dat
  - \*.ini
  - \*.sop
  - \*.man
  - \*.par (species.par, genereg.par)
  - \*.con (if necessary)
  - \*.dep
- 3) Start the 4C.exe (in a dos-view, this allows reading information when model run is finished), a GUI opens.
- 4) In the menu tick 'start simulation' and then 'start 4C'  
→ Choosing 'Edit control file' and the 'start 4C' allows you to edit the control file as described on [http://www.pik-potsdam.de/4c/web\\_4c/guide/user\\_gui.htm](http://www.pik-potsdam.de/4c/web_4c/guide/user_gui.htm) but some of the functions are not always working and the simulation run maybe aborted.
- 5) Select the appropriate simulation control file (\*.sim) from the 'input' folder and the simulation will start.

#### B. To edit the simulation control file (\*.sim):

- 1) Open the appropriate sim-file in the 'input' folder with a text editor.
- 2) Edit it according to the descriptions at:  
[http://www.pik-potsdam.de/4c/web\\_4c/guide/user\\_sim01.html](http://www.pik-potsdam.de/4c/web_4c/guide/user_sim01.html)  
→ For 'inexperienced 4C-users' it is advisable not to change the 'choice of model options' and the 'simulation specifications' but firstly to understand the output ('output specifications') and the input files ('input files') controls and structure.  
It is recommended to edit the name of the produced files for any simulations with changed control parameters (e.g. number of simulation years)



! \*\*\* input files \*\*\*\*\*

3) Save the edited file.

### C. To view model results

A visualization of results in the 4C GUI does not exist.

Information about the output files are given here:

[http://www.pik-potsdam.de/4c/web\\_4c/guide/user\\_output01.html](http://www.pik-potsdam.de/4c/web_4c/guide/user_output01.html)

### 2. UNIX/Linux & WINDOWS without GUI

In this case, graphical user interface is not available. 4C has to start from the command line with the same requirements for an input and output subdirectory. A selection from a menu is necessary:

```
C:\Windows\system32\cmd.exe - 4c2.2wg
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

d:\4c_v1.1\4c2.2_ngui\4c2.2wg\4c2.2wg\Debug\4c2.2wg
*****
***** Welcome to 4C *****
*****
1 <Enter>.. Start with default simulation control: test0.sim
2.....Edit simulation control file name
*****
Make your choice: 2
Simulation control file <default= test0.sim>: input/test.sim_
```

And the name of the simulation control file (here test.sim) has to enter. The following steps are the same as in case 1).

### D. Detailed model description and user manual

The user finds details of processes and underlying process equations, variables, parameters, and hints for species parameterization in the document 4C\_description.pdf in the repository:

<https://gitlab.pik-potsdam.de/foresee/4C/tree/master/descriptions>

and additional information about usage of the model on the 4C website:

<http://www.pik-potsdam.de/4c/>