

Numerical settings of the CLASS model
Atmospheric boundary layer:
Integrating chemistry and land interactions

Jordi Vilà-Guerau de Arellano, Chiel C. van Heerwaarden,
Bart J.H. van Stratum and K. van den Dries

We provide the numerical settings of the hands-on exercises proposed in the book ***Atmospheric boundary layer: Integrating chemistry and land interactions***. The exercises have been described in the book including all the information on initial and boundary conditions. As such, these numerical settings are only a repetition to the ones described in length (physical meaning, Tables) in the book.

There are a total of 67 numerical experiments and each experiment has additional ones to study the sensitivity of the experiment to changes in the initial and boundary conditions.

The chapters with hands-on exercises are:

- Chapter 4 (6 experiments)
- Chapter 5 (4 experiments)
- Chapter 6 (12 experiments)
- Chapter 7 (3 experiments)
- Chapter 8 (11 experiments)
- Chapter 10 (9 experiments)
- Chapter 12 (5 experiments)
- Chapter 13 (8 experiments)
- Chapter 14 (4 experiments)
- Chapter 15 (4 experiments)

By opening the folder, you will find the files (exX-Y-Z.mxl) corresponding to the specific experiment. For example, ex**4-2-1**.mxl contains all the numerical settings of the numerical exercise “From polar to desert conditions: sensitivity to the sensible heat flux” described in Section **4.2** (exercise **1**) at Chapter 4.

As described in Chapter 16 (section 16.1), you can load the file *.mxl by clicking in File (upper left corner) and load the contents of the file. You will get automatically all the settings of the numerical experiments (names of the experiments *italic*). By clicking in start simulation the experiment is performed. If you want to save the numerical settings, you need to click in File and save the experiment.

Please report to Jordi Vilà (jordi.vila@wur.nl) in case of bugs or potential suggestions to improve the exercises.