

Convection of thermal bubbles as model tests (exercises)

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Tasks

Task 1: Try to reproduce the first experiment from document `d2_bubble.pdf` by Ján Mašek with non-hydrostatic model `pilv2d`. Report the results.

Task 2: Construct a test with bubble convection. See attached papers and documents for hints and ideas. Report the results.

NB and Hints

- To define initial state you need to edit `initstate.c`
- Model parameters can be changed in `constants.h`.
- Model `pilv2d` does not have implicit treatment in vertical. When increasing horizontal grid step without increasing vertical grid step you probably can not increase the time step.
- On `linux` computer set `unlimit stacksize` or `ulimit -s unlimited` depending on shell. On `windows` computers large grids can not be used.
- Make sure that the `pilv2d` `outputfilename` and `filename` in the `gnuplot` script coincide