

# TLab

(Katherine Fodor, 2019-03-28)

TLab — an acronym for Turbulence Laboratory — is a set of tools whose aim is to efficiently solve and analyse a particular set of governing equations with a controlled accuracy. The tools allow the user to simulate and analyse different configurations of 2D and 3D turbulent flows.

Historically, TLab has been used by the group *Turbulent Mixing Processes in the Earth System*, part of the Atmosphere in the Earth System department, to perform direct numerical simulations of various atmospheric boundary layer regimes as well as the ice-ocean interface.

The code is available at: <https://github.com/turbulencia/tlab>

The manual is also available there under `docs/manual.pdf`. As stated in the manual:

This manual is simply an introduction to the methodology and code, just a small part of the documentation of the set of tools TLab. The major part of the documentation is in the code itself in terms of README files, git version control system and comments within the source files. A set of examples has also been included for the user to get acquainted with the different tools (pre-processing, simulation and post-processing). Please note that, by default, all the different tools are continuously under development, so this document is continuously incomplete - the comments within the source files have always priority.

In this Wiki, we provide a quick start guide to setting up and running one of the example 2D flows. These can typically be run on your local machine and do not require high performance computing systems. For more advanced usage, we refer the user to the documentation available in the source code.

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