

# Omega - Zwack-Okossi program README

This is a manual for downloading, compiling and running the OZO-program in your own computer.

## 1. Technical requirements:

1. Standard NETCDF-library
2. Intel Math Kernel Library. The program uses Intel's MKL library for solving poisson's equation. It can be downloaded for free, but registration is required. See more: [https://software.intel.com/en-us/articles/free\\_mkl](https://software.intel.com/en-us/articles/free_mkl)
3. GNU's gfortran compiler

## 2. Downloading the source code

1. Launch a terminal window
2. Go to the local directory where you want to put the program
3. Write to the command line:

```
git clone git@bitbucket.org:mikarant/ozo.git
```

If the clone was successful, you should now have ozo-directory appeared on your local drive.

## 3. Compiling the program

Downloaded directory contains a makefile for compiling and running the program. At first, you should change paths for netcdf- and mkl-libraries.

1. Go to ozo-directory
2. Open makefile, for example with emacs:

```
emacs makefile
```

3. Change following paths according to where netcdf and mkl libraries are located locally in your computer:

```
NETCDF_INCLUDES = -I/usr/include
NETCDF_LIBS      = -L/usr/lib -lnetcdff
MKLR00T          = /home/mikarant/intel/compilers_and_libraries_2016.2.181/linux/mkl
```

4. Save your changes and close the makefile

If your changed paths are correct, you should be now able to compile the program. Compiling can be done by just writing command

```
make
```

in the ozo-directory. If the compiling was successful, you should have executable called `ozo` appeared in your directory.

#### 4. Running the test case

Once you have compiled the program, you can test whether it is working by running the test case. You can do it by writing command

```
make test
```

in the ozo-directory. Test-directory contains the data needed by the test case. Datafile is in ncdf-format and contains WRF-output variables and calculated vertical motion fields from two timesteps.