

## ESM Tools

- Documentation and References
- How-to Guide and Examples

**Nadine Wieters**

Climate Dynamics

**Dirk Barbi**

Climate Dynamics

Paleo-Climate Dynamics



ALFRED-WEGENER-INSTITUT  
HELMHOLTZ-ZENTRUM FÜR POLAR-  
UND MEERESFORSCHUNG

ESM Tools Workshop 18-19 June 2018



# Outline

---

## 1 Documentation and References

- esm-usermanual
- GitLab Wiki

## 2 How-to Guide and Examples



# Documentation and References

esm-usermanual

## Where can I find the esm-usermanual?

📌 esm-tools project on GitLab

<https://gitlab.dkrz.de/esm-tools/esm-usermanual>

📌 [https://gitlab.dkrz.de/esm-tools/esm-usermanual/blob/master/esm\\_usermanual.pdf](https://gitlab.dkrz.de/esm-tools/esm-usermanual/blob/master/esm_usermanual.pdf)

## How can I contribute to the esm-usermanual?

- Read the esm-usermanual and give feedback to it  
([nadine.wieters@awi.de](mailto:nadine.wieters@awi.de))
- Ask questions to the esm-tools
- Work on the document

# Documentation and References



esm-usermanual

## How can I work on the esm-usermanual document?

- Written with the  $\text{\LaTeX}$  typesetting system (using KOMA-Script)
- Create your own branch (`mybranch`) on GitLab
- Get a local copy of your branch on your desktop computer
- `git clone -b mybranchname`  
`https://gitlab.dkrz.de/esm-tools/esm-usermanual.git`
- Do your changes
- `git add`, `commit`, `push`
- Do a merge request for your branch



# Documentation and References



## GitLab Wiki

The screenshot shows a Mozilla Firefox browser window displaying a GitLab Wiki page. The URL in the address bar is <https://gitlab.dkrz.de/esm-tools/esm-namscripts/wikis/home>. The page title is "Home". The sidebar on the left includes links for "Project", "Repository", "Issues", "Merge Requests", "CI / CD", "Wiki", "Snippets", and "Settings". The main content area has sections for "General", "Where Do I...?", and "How Do I...?". The "General" section contains a note about typical use cases for ESM experiments and a link to the FAQ. The "Where Do I..." section lists links for "Find user manual" and "Add, change or remove namelist entries via namscript". The "How Do I..." section lists links for "Run an initial model run (cold start)", "Run a simple Pre-Industrial Control simulation", "Restart AWI-CM from an already existing run (spinup)", "Continue a model run that has been successfully completed or that unfortunately crashed", "Overcome numeric instability by temporarily setting enhanced diffusion ENSTDIF", "Change AWI-CM restart frequency", "Change AWI-CM output schedule (output data)", "Select a / off postprocessing", and "modify the postprocessing (e.g. keep daily output for selected variables, while generating monthly output for the rest of the data)". To the right of the main content is a sidebar titled "Clone repository" with links to various AWI-related documentation pages. At the bottom of the page, there is a footer with the URL <https://gitlab.dkrz.de/esm-tools/esm-namscripts/wikis/home>.

# AWI-CM (CMIP6)

---



## Tasks to get and run AWI-CM (CMIP6)

- ① Downloading the source code → [esm-master](#)
- ② Compiling the source code → [esm-master](#), [esm-environment](#)
- ③ Set up and configure an experiment → [esm-runscripts](#)
- ④ Executing the run → [esm-runscripts](#)

# AWI-CM (CMIP6)

---



## Tasks to get and run AWI-CM (CMIP6)

- ① Downloading the source code → [esm-master](#)
- ② Compiling the source code → [esm-master](#), [esm-environment](#)
- ③ Set up and configure an experiment → [esm-runscripts](#)
- ④ Executing the run → [esm-runscripts](#)

# AWI-CM (CMIP6)

---



## Tasks to get and run AWI-CM (CMIP6)

- ① Downloading the source code → [esm-master](#)
- ② Compiling the source code → [esm-master](#), [esm-environment](#)
- ③ Set up and configure an experiment → [esm-runscripts](#)
- ④ Executing the run → [esm-runscripts](#)

# AWI-CM (CMIP6)

---



## Tasks to get and run AWI-CM (CMIP6)

- ① Downloading the source code → [esm-master](#)
- ② Compiling the source code → [esm-master](#), [esm-environment](#)
- ③ Set up and configure an experiment → [esm-runscripts](#)
- ④ Executing the run → [esm-runscripts](#)

# AWI-CM (CMIP6)

---



## Tasks to get and run AWI-CM (CMIP6)

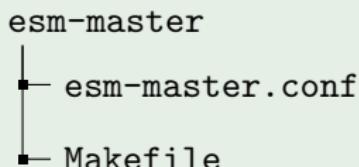
- ① Downloading the source code → [esm-master](#)
- ② Compiling the source code → [esm-master](#), [esm-environment](#)
- ③ Set up and configure an experiment → [esm-runscripts](#)
- ④ Executing the run → [esm-runscripts](#)



# AWI-CM (CMIP6)

## 0. Getting the tools

```
$ git clone https://gitlab.dkrz.de/esm-tools/esm-master.git  
...  
$ cd esm-master
```



Configure esm-master: edit esm-master.conf

- 1 SWREPO-USERNAME=<your-swrepo-username>
- 2 DKRZ-GITLAB-USERNAME=<your-dkrz-gitlab-username>

# AWI-CM (CMIP6)



```
$ make get-esm-environment  
...  
$ make get-esm-runscripts  
...
```



## 1. Downloading and 2. compiling

```
$ make get-awicm-CMIP6  
...
```

```
esm-master  
|  
+-- awicm-CMIP6  
|  
+-- esm-environment  
|  
+-- esm-master.conf  
|  
+-- esm-runsctipts  
|  
+-- Makefile
```

```
$ make comp-awicm-CMIP6  
...
```

# AWI-CM (CMIP6)

---



## 3. Set up an experiment and 4. execute the run

- Copy a prescribed runscript to your working directory

```
$ ./awicm-CMIP6.run -e awicm-cmip6-experiment
```

Thank you for your attention