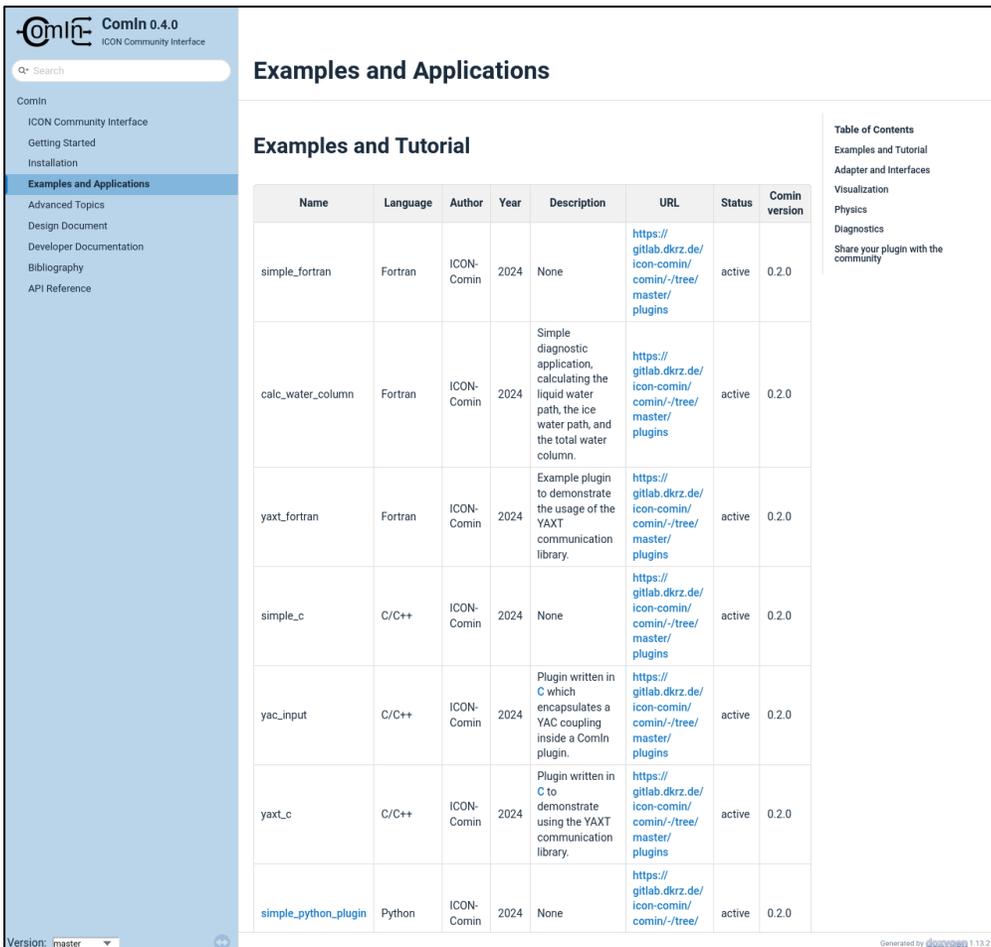


# ComIn – ICON Community Interface Applications and Examples

Information on ComIn Plugins and Plugin Examples can be found in the ComIn documentation



The screenshot shows the ComIn 0.4.0 documentation page. The main content is a table titled "Examples and Tutorial" with columns for Name, Language, Author, Year, Description, URL, Status, and ComIn version. The table lists several examples, including Fortran and C/C++ plugins. A sidebar on the left contains a navigation menu, and a sidebar on the right contains a table of contents.

| Name                 | Language | Author     | Year | Description   | URL   | Status | ComIn version |
|----------------------|----------|------------|------|---|---|--------|---------------|
| simple_fortran       | Fortran  | ICON-Comin | 2024 | None  | <a href="https://gitlab.dkrz.de/icon-comin/comin/-/tree/master/plugins">https://gitlab.dkrz.de/icon-comin/comin/-/tree/master/plugins</a> | active | 0.2.0         |
| calc_water_column    | Fortran  | ICON-Comin | 2024 | Simple diagnostic application, calculating the liquid water path, the ice water path, and the total water column. | <a href="https://gitlab.dkrz.de/icon-comin/comin/-/tree/master/plugins">https://gitlab.dkrz.de/icon-comin/comin/-/tree/master/plugins</a> | active | 0.2.0         |
| yaxt_fortran         | Fortran  | ICON-Comin | 2024 | Example plugin to demonstrate the usage of the YAXT communication library.  | <a href="https://gitlab.dkrz.de/icon-comin/comin/-/tree/master/plugins">https://gitlab.dkrz.de/icon-comin/comin/-/tree/master/plugins</a> | active | 0.2.0         |
| simple_c             | C/C++    | ICON-Comin | 2024 | None  | <a href="https://gitlab.dkrz.de/icon-comin/comin/-/tree/master/plugins">https://gitlab.dkrz.de/icon-comin/comin/-/tree/master/plugins</a> | active | 0.2.0         |
| yac_input            | C/C++    | ICON-Comin | 2024 | Plugin written in C which encapsulates a YAC coupling inside a ComIn plugin.                                      | <a href="https://gitlab.dkrz.de/icon-comin/comin/-/tree/master/plugins">https://gitlab.dkrz.de/icon-comin/comin/-/tree/master/plugins</a> | active | 0.2.0         |
| yaxt_c               | C/C++    | ICON-Comin | 2024 | Plugin written in C to demonstrate using the YAXT communication library.  | <a href="https://gitlab.dkrz.de/icon-comin/comin/-/tree/master/plugins">https://gitlab.dkrz.de/icon-comin/comin/-/tree/master/plugins</a> | active | 0.2.0         |
| simple_python_plugin | Python   | ICON-Comin | 2024 | None  | <a href="https://gitlab.dkrz.de/icon-comin/comin/-/tree/">https://gitlab.dkrz.de/icon-comin/comin/-/tree/</a>                             | active | 0.2.0         |

9 Examples/Tutorials

1 Adapter/Interface

2 Visualisation

2 Physics

3 Diagnostics

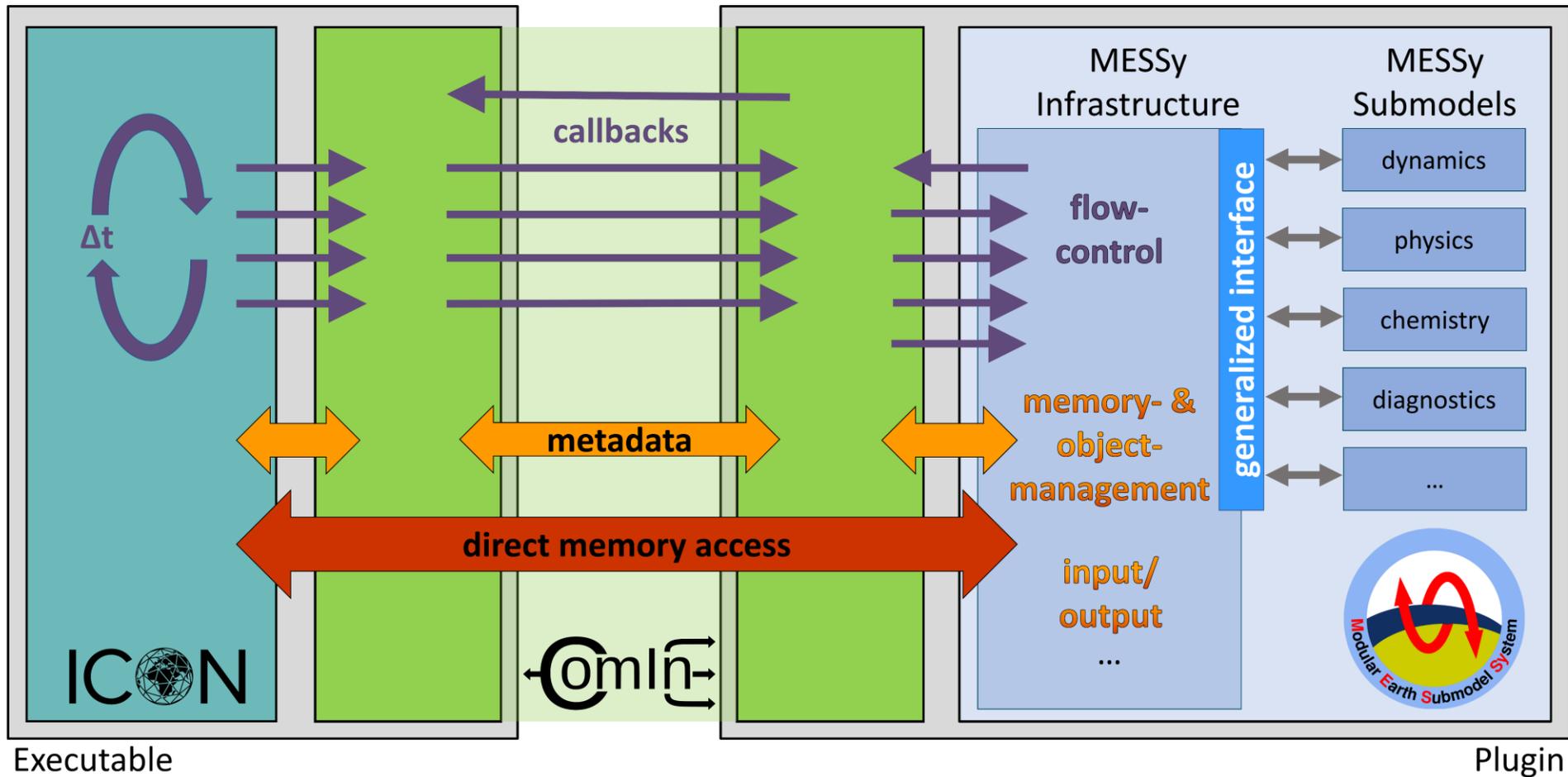
If you want to share your plugin with the community, we can add it to the list!

→ [comin@icon-model.org](mailto:comin@icon-model.org)

<https://icon-comin.gitlab-pages.dkrz.de/comin/index.html>

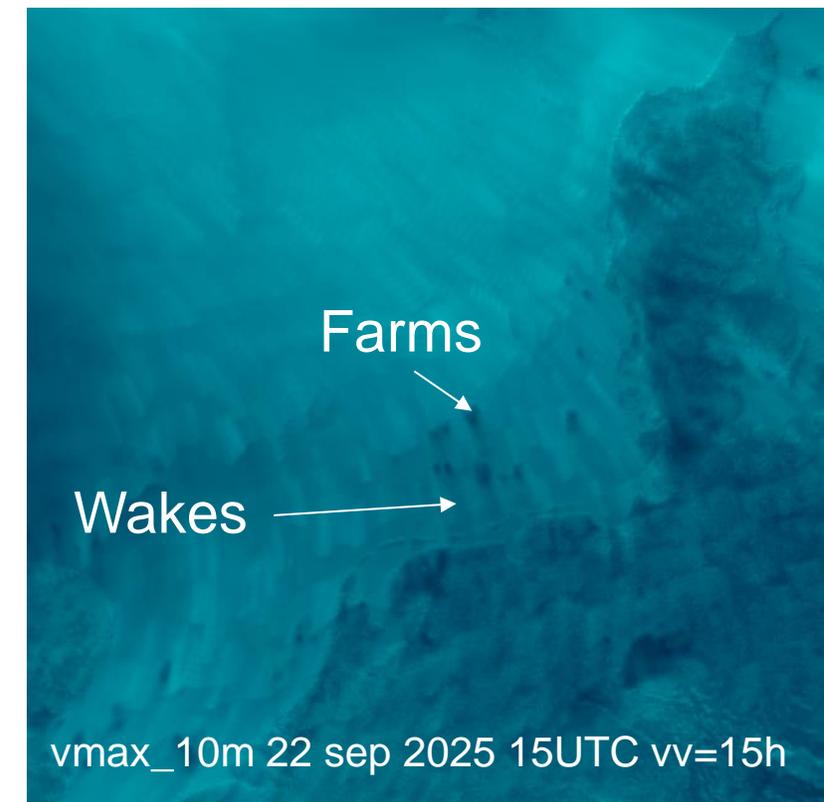
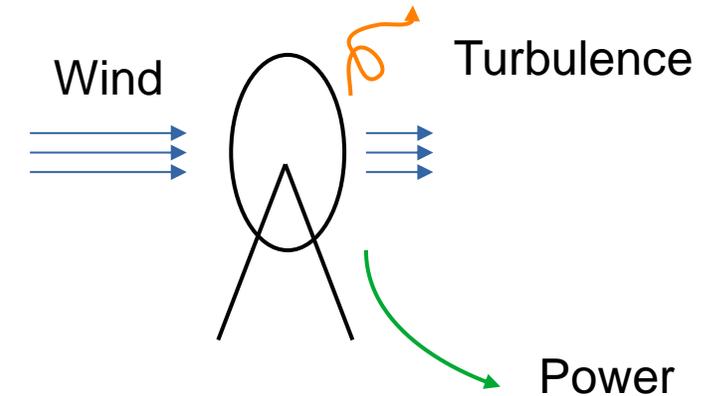


# MESSy as ComIn Plugin



# WindWaker

- Wind farms
  - extract power from flow
  - create turbulence
- Add parameterization via ComIn plugin
- ICON dynamics create observed wakes behind farms



# Pamtra – insitu

- **PAMTRA:** Requires ICON data in high time frequency on complex domains
- Replace legacy post-process workflow with insitu-processing to reduce large intermediate data storage
- Python plugin sends data over MPI to an external process (1 ICON process)
- External Python process
  - Receives data (from arbitrary ICON process)
  - Runs pamtra
  - Writes processed data to dataset

