



Hands-on session on Med-CORDEX simulation data sharing

3rd Jul. 2025
(on-line)

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Florence.Sevault@meteo.fr

Outline for the session

1. Scope
2. CORDEX resources
3. Internal data request
4. Med-CORDEX model documentation

Scope

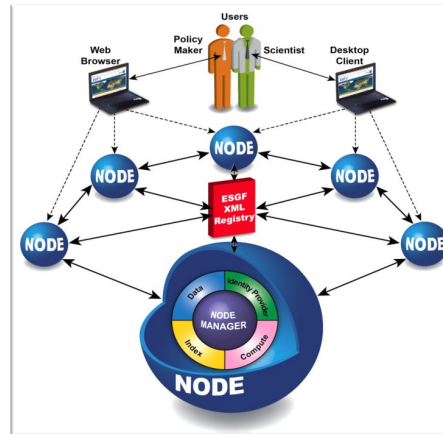
The main aim is to solve any remaining doubt regarding data sharing and publication to ESGF

The Earth System Grid Federation (ESGF) is an international collaboration for the software that powers most global climate change research, notably assessments by the [Intergovernmental Panel on Climate Change](#) (IPCC).

Using a system of geographically distributed peer nodes—independently administered yet united by common protocols and interfaces—the ESGF community holds the premier collection of simulations and observational and reanalysis data for climate change research. —

<https://esgf.github.io/mission.html>

This is how it looks from the outside:
<https://esgf-metagrid.cloud.dkrz.de>



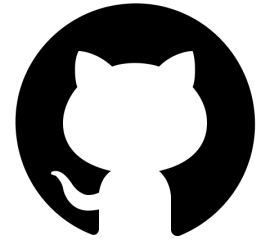
(<https://esgf-node.ipsl.upmc.fr/projects/esgf-ipsl/>)



Scope

The main aim is to solve any remaining doubt regarding data sharing and publication to ESGF

- Steps to data sharing
 - Simulation status update
 - Model and institution registration
 - Archiving specifications (CMOR)
 - Data request
 - Model documentation
- Levels of data sharing (internal vs ESGF)
- Timeline



Github
in 1 min

https://github.com/Med-CORDEX

Med-CORDEX

Overview **Repositories 3** Projects Packages **Teams** **People 1** Insights Settings

Med-CORDEX
CORDEX Mediterranean climate research community
<https://www.medcordex.eu>

Follow

Popular repositories

- model-documentation** (Public)
Med-CORDEX model documentation
HTML
- publications** (Public)
Med-CORDEX publication list
Python
- internal-data-request** (Public)
Python

View as: Public

You are viewing the README and pinned repositories as a public user.

You can [create a README file](#) or [pin repositories](#) visible to anyone.

[Get started with tasks](#) that most successful organizations complete.

Discussions

Set up discussions to engage with your community!

[Turn on discussions](#)

Repositories

Find a repository... Type Language Sort New

Organizations collect repositories and user teams with different roles

Github
in 1 min

https://github.com/Med-CORDEX/model-documentation

Med-CORDEX / model-documentation

Type to search

Code Issues 6 Pull requests Discussions Actions Projects Security Insights Settings

model-documentation

Watch 0 Fork 0 Star 0

main 1 Branch

jesusff Fix README.md important tag 2cc1366 · 4 days ago 24 Commits

_data	Many fixes and additional model example	last week
_includes	Many fixes and additional model example	last week
_layouts	Many fixes and additional model example	last week
_models	Add README and ocean_biogeochemist...	4 days ago
images	Many fixes and additional model example	last week
README.md	Fix README.md important tag	4 days ago
_config.yaml	Many fixes and additional model example	last week
index.md	Many fixes and additional model example	last week

About

Med-CORDEX model documentation

[med-cordex.github.io/model-documen...](#)

Readme

Activity

Custom properties

0 stars

0 watching

0 forks

Report repository

Releases

No releases published

[Create a new release](#)

Repositories collect code* and track the different versions (a.k.a. *commits*)

Github in 1 min

https://github.com/Med-CORDEX/model-documentation

Med-CORDEX / model-documentation

Code Issues 6 Pull requests Discussions Actions Projects Security Insights Settings

is:issue state:open

Open 6 Closed 0

Author Labels Projects Milestones Assignees Types Newest

- Do we want to extend the EMD? framework #6 · jesusff opened yesterday
- Ocean biogeochemistry component description framework #5 · jesusff opened 4 days ago
- Ocean model characterization framework #4 · jesusff opened 4 days ago
- Characterization of river routing schemes framework #3 · jesusff opened 4 days ago
- river_routing as model component or part of the land_surface? framework #2 · jesusff opened 4 days ago
- Different representation of smaller seas and river inputs across models framework #1 · jesusff opened 4 days ago

Issues are used to report problems with the code or discuss about any topic related to the repo. They **track decisions**.

Github
in 1 min

Ocean biogeochemistry component description #5

Edit New issue

Open

jesusff opened 4 days ago

Member

I added an example of the ocean biogeochemistry component in the ENEA-REG3 model (even if it likely does not belong there):

[model-documentation/_models/ENEA-REG3.md](#)
Lines 203 to 218 in 2cc1366

```
203 ocean_biogeochemistry:
204   component: ocean_biogeochemistry
205   name: BFM-OGSTM vx.Y
206   family: BFM
207   description: >
208     The BFM-OGSTM coupled software is essentially a numerical solver for the
209     transport reaction equations where the reaction terms are defined by the
210     Biogeochemical Flux Model (BFM) framework.
211   references:
212     - citation: Lazzari and Bolzon (2023)
213       doi: https://www.bfm-community.eu/files/bfm-ogstm-manual_r1.0_202306.pdf
214     code_base: https://github.com/inogs/ogstm
```

We'd need some experts to check this and also to see if we can introduce some additional specific features of this models, in order to understand their differences

@mcreal82 ?

Create sub-issue

jesusff mentioned this yesterday

Do we want to extend the EMD? #6

Assignees
No one - Assign yourself

Labels
framework

Type
No type

Projects
No projects

Milestone
No milestone

Relationships
None yet

Development
Code with Copilot Agent Mode

Notifications
Customize
Unsubscribe

Easily refer to code snippets, related issues (#5) or @mention people

#5 · jesusff opened 4 days ago

Ocean model characterization framework

#4 · jesusff opened 4 days ago

Characterization of river routing schemes

#3 · jesusff opened 4 days ago

river_routing as model component or not

#2 · jesusff opened 4 days ago

Different representation of smaller scales

#1 · jesusff opened 4 days ago

Github
in 1 min
(maybe 2 ...)

https://github.com/Med-CORDEX/model-documentation

Med-CORDEX / model-documentation

Type to search

Code Issues 6 Pull requests Discussions Actions Projects Security Insights Settings

model-documentation Public

Edit Pins Watch 0 Fork 0 Star 0

main 1 Branch 0 Tags Go to file Code About

jesusff Fix README.md important tag 2cc1366 · 4 days ago

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index.md	Many fixes and additional model example	last week

Report repository

Releases

No releases published

[Create a new release](#)

Pull requests (PR) allow any user to propose changes to the code. They are reviewed and accepted (or not) by the repo maintainers.

Github
in 1 min
(maybe 2 ...)

The screenshot shows a web browser displaying the GitHub repository page for 'Med-CORDEX / model-documentation'. The 'Code' tab is selected and circled in red. The main content area shows the 'README.md' file, which has been updated by user 'jesusff' 4 days ago. The file is 1.64 KB and contains 23 lines of code. A yellow callout bubble points to the edit icon (a pencil) in the file toolbar. The README content includes a title 'Med-CORDEX model documentation', a paragraph describing the project as a test site for documenting regional climate models, and a section titled 'How to contribute'.

Depending on permissions, you can directly **edit** any file, or you are offered to *fork* the repo and open a PR.

Github
in 1 min
(maybe 2 ...)

Code

model-documentation (Public)

main 1 Branch 0 Tags

Go to file

Code

About

Med-CORDEX model documentation

[med-cordex.github.io/model-documen...](#)

Readme

Activity

Custom properties

0 stars

0 watching

0 forks

Report repository

Releases

No releases published

[Create a new release](#)

jesusff Fix README.md important tag 2cc1366 · 4 days ago 24 Commits

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index.md	Many fixes and additional model example	last week

Repositories may have a **public website** (a.k.a. deployments) rendered from the code

Github
in 1 min
(maybe 2 ...)

The screenshot shows the GitHub interface for the repository 'Med-CORDEX / model-documentation'. The notification dropdown menu is open, showing three options: 'Participating and @mentions', 'All Activity', and 'Ignore'. The 'Participating and @mentions' option is selected and circled in red. A yellow callout box points to the 'Watch' button and contains the text: 'You can watch (i.e. subscribe to) a repository to be notified about issues'. The repository page shows a file tree with folders like '_data', '_includes', '_layouts', and '_models', and files like 'README.md', '_config.yaml', and 'index.md'. The commit history shows a recent commit by 'jesusff' titled 'Fix README.md important tag'.

https://github.com/Med-CORDEX/model-documentation

Med-CORDEX / model-documentation

Type to search

Code Issues 6 Pull requests Discussions Actions Projects Security Insights Settings

model-documentation Public

Edit Pins Watch 0 Fork 0 Star 0

main 1 Branch 0 Tags

Go to file

jesusff Fix README.md important tag 2cc1366 4 days ago

_data Many fixes and additional model example

_includes Many fixes and additional model example

_layouts

_models

images

README.md Fix README.md important tag 4 days ago

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Participating and @mentions
Only receive notifications from this repository when participating or @mentioned.

All Activity
Notified of all notifications on this repository.

Ignore
Never be notified.

Custom
Select events you want to be notified of in addition to participating and @mentions.

You can **watch** (i.e. subscribe to) a repository to be notified about issues

Github CORDEX resources

Organization

- <https://github.com/WCRP-CORDEX>

Discussion forum

- <https://github.com/orgs/WCRP-CORDEX/discussions>

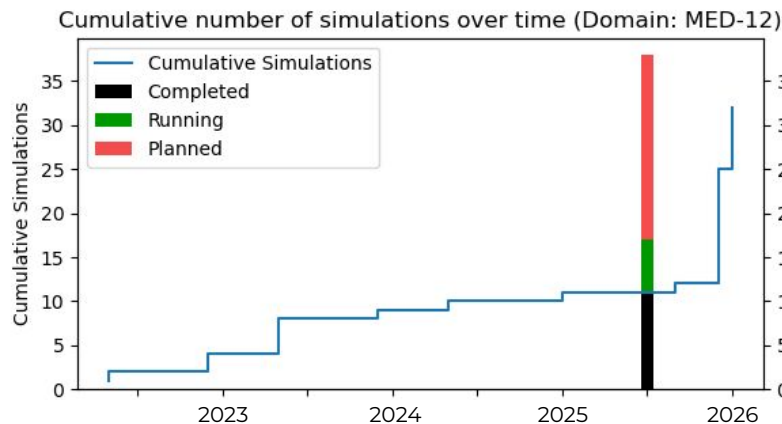
Repositories

- <https://github.com/WCRP-CORDEX/data-request-table>
- <https://github.com/WCRP-CORDEX/cordex-cmip6-cmor-tables>
- <https://github.com/WCRP-CORDEX/cordex-cmip6-cv>
- <https://github.com/WCRP-CORDEX/archive-specifications>
- <https://github.com/WCRP-CORDEX/simulation-status>
- <https://github.com/WCRP-CORDEX/cmip6-for-cordex>

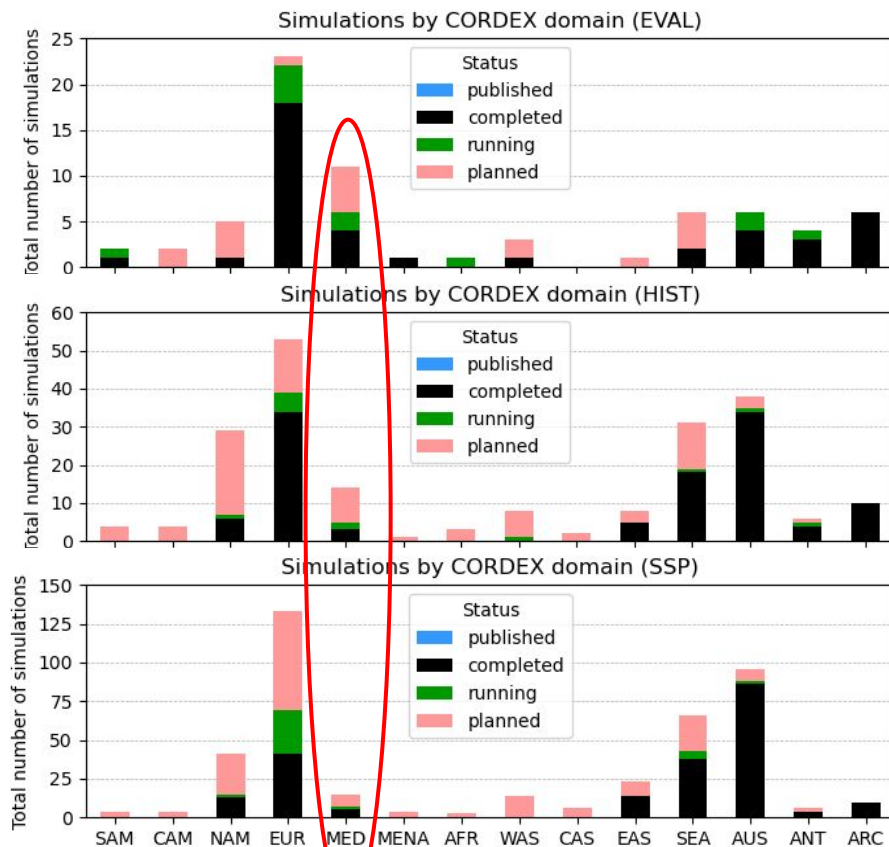


Only as good as you keep it updated

Please, provide info regularly,
updating your plans & status.



Simulation status



Simulation status

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CORDEX CMIP6 downscaling plans

[Back to main](#) or see tables by [domain](#), [scenario](#) or [experiment](#)

(Version: 2025-06-10 17:14 UTC)

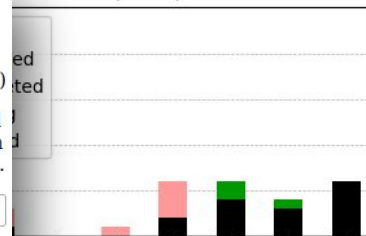
This is an interactive table view of each of the CORDEX-CMIP6 simulations. The table can be sorted by the different columns. The search field can be used to filter the table. Several terms can be entered (e.g. "evaluation completed" or "mpi ssp585") to show the rows matching all terms. The table contents can be downloaded as a CSV file [here](#). To contribute/update simulations open and issue or pull request at <https://github.com/WCRP-CORDEX/simulation-status>.

Show entries

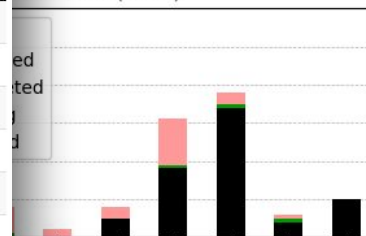
Search:

domain	institute	contact	rcm_name	driving_model	ensemble	experiment	status	ECD	comments
MED-12	ICTP	E. Coppola	RegCM-ES1-1	ERA5		evaluation	running	2025-09	
MED-12	ENEA	G. Sannino	ENEA-REG3	ERA5		evaluation	running	2025-12	
MED-12	ENEA	G. Sannino	ENEA-REG3	EC-Earth3	r1i1p1f1	historical	running	2025-12	
MED-12	ENEA	G. Sannino	ENEA-REG3	MPI-ESM1-2-HR	r1i1p1f1	historical	running	2025-12	
MED-12	ENEA	G. Sannino	ENEA-REG3	EC-Earth3	r1i1p1f1	ssp370	running	2025-12	
MED-12	ENEA	G. Sannino	ENEA-REG3	MPI-ESM1-2-HR	r1i1p1f1	ssp370	running	2025-12	
MED-12	NKUA	J. Karagiorgos	MedX-CM	ERA5		evaluation	planned	2025-12	
MED-12	IPSL	J. Polcher	RegIPSLv2	ERA5		evaluation	planned	2023-12	
MED-12	CLMcom-IMS	P. Khain / L. Uzan / E. Vadislavski	ICON-OASIS-NEMO	ERA5		evaluation	planned	2024-12	

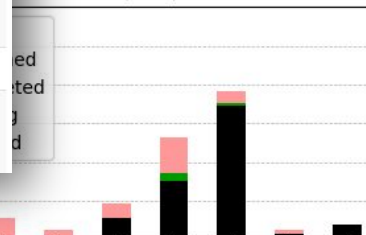
Simulations by CORDEX domain (EVAL)



Simulations by CORDEX domain (HIST)



Simulations by CORDEX domain (SSP)



Simulation status

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CORDEX CMIP6 downscaling plans

[Back to main](#) or see tables by [domain](#), [scenario](#) or [experiment](#)

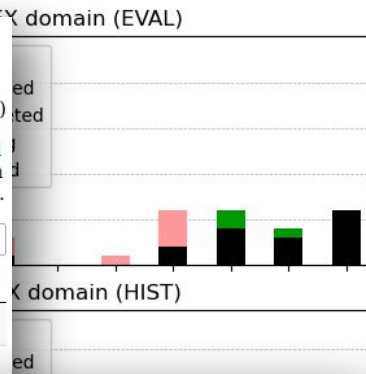
(Version: 2025-06-10 17:14 UTC)

This is an interactive table view of each of the CORDEX-CMIP6 simulations. The table can be sorted by the different columns. The search field can be used to filter the table. Several terms can be entered (e.g. "evaluation completed" or "mpi ssp585") to show the rows matching all terms. The table contents can be downloaded as a CSV file [here](#). To contribute/update simulations open and issue or pull request at <https://github.com/WCRP-CORDEX/simulation-status>.

Show entries

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MED-12	ENEA	G. Sannino	ENEA-REG3	ERA5		evaluation	running	2025-12	



MED-12^

Colour legend for status: (**planned** **running** **completed** **published**) // source_type: (**unregistered** **ARCM** **AORCM** **ESD**)

	Institution(s)	CLMcom-GUF	CNRM		UBEL	ENEA		CLMcom-IMS	CMCC	NKUA	ICTP	IPSL
	RCM	CCLM5-0-9-NEMOMED12-3-6	CNRM-RCSM6	CNRM-RCSM6B	EBUPOM2e	ENEA-REG2	ENEA-REG3	ICON-OASIS-NEMO	MedESM	MedX-CM	RegCM-ES1-1	RegIPSLv2
driving_model	ensemble											
ERA5		evaluation		evaluation	evaluation	evaluation	evaluation	evaluation	evaluation	evaluation	evaluation	evaluation
CNRM-ESM2-1	r11ip1f2		hist ssp585	hist ssp126 ssp370								
EC-Earth3	r11ip1f1						hist ssp370					
EC-Earth3-Veg	r12ip1f1	hist ssp585										
	r11ip1f1										hist ssp370	
MPI-ESM1-2-HR	r11ip1f1					hist ssp126 ssp245 ssp585	hist ssp370	hist ssp370			hist ssp370	
NorESM2-MM	r11ip1f1			hist ssp126 ssp370							hist ssp370	
TBD	TBD								hist	hist		



Simulation status

Only as good as you keep it u

CORDEX CMIP6 downscaling plan

[Back to main](#) or see tables by [domain](#), [scenario](#) or [experiment](#)

This is an interactive table view of each of the CORDEX-CMIP6 simulations to filter the table. Several terms can be entered (e.g. "evaluation completed" to be downloaded as a CSV file [here](#). To contribute/update simulations open a

Show entries

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MED-12^

Colour legend for status: (**planned** **running** **completed** **published**) // source_type

driving_model	Institution(s)	CLMcom-GUF	CNRM		EBUPOM2e	ENEA-REG2	ENEA-REG3	NEMO	MedESM	MedX-CM	RegCM-ES1-1	RegIPSLv2
			RCM	CCLM5-0-9-NEMOMED12-3-6								
ERA5	ensemble	evaluation		evaluation	evaluation	evaluation	evaluation	evaluation	evaluation	evaluation	evaluation	evaluation
CNRM-ESM2-1	r11p1f2		hist ssp585	hist ssp126 ssp370								
EC-Earth3	r11p1f1											
EC-Earth3-Veg	r12i1p1f1	hist ssp585										
	r11p1f1										hist ssp370	
MPI-ESM1-2-HR	r11p1f1				hist ssp126 ssp245 ssp585	hist ssp370	hist ssp370				hist ssp370	
NorESM2-MM	r11p1f1			hist ssp126 ssp370							hist ssp370	
TBD	TBD								hist	hist		

Possibility to define experiments (sub-ensembles). E.g. in EUR there are:
[https://wcrp-co\[...\]/CORDEX_CMIP6_status_by_experiment.html](https://wcrp-co[...]/CORDEX_CMIP6_status_by_experiment.html)
EUR-12^

The following experiments contribute to CORDEX EUR-12 domain:

- EUR-12 balanced matrix experiment
- EUR-12 balanced (ECD by 2024-12)
- EUR-12 balanced (ECD by 2025-06)
- EUR-12 balanced (ECD by 2025-12)
- Coupled simulations
- GCM internal variability
- RCM internal variability
- Many-GCM experiment
- Many-SSP experiment
- UDAG project
- NUKLEUS project
- CORDEX FPS LUCAS
- CLM community (COSMO-CLM)
- CLM community (ICON-CLM)
- EURO-CORDEX WRF community
- HCLIM community
- RegCM community
- Empirical-statistical downscaling
- Statistical emulators

Model and institution registration

<https://github.com/WCRP-CORDEX/cordex-cmip6-cv>

Registering Institutions, Models, or requesting changes to CVs:

To register your institution or model, please submit an issue using these forms:

- [New institution_id](#)
- [New source_id \(i.e. model\)](#)

These forms will automatically create a pull request, where further details can be discussed. Models must not be distinguished by the `institution_id`. Do not register a new `source_id` if the same model or method configuration is already registered by other institution. Just request to add your `institution_id` to the list of the corresponding `source_id`.

To request changes in any other CV use a [blank issue](#) with a meaningful title. E.g. `source_type: add YOURNEWTYP` or `source_id: update MODEL123A further_info_url`

To view current repository contents in HTML format, point your browser to:

target	URL
<code>institution_id</code>	CORDEX-CMIP6_institution_id.html
<code>source_id</code>	CORDEX-CMIP6_source_id.html

The CVs build on logic that is described in the [CORDEX-CMIP6 Archiving Specifications for Dynamical Downscaling](#) document.

About



Controlled Vocabulary (CV) for use in CORDEX

[wcrp-cordex.github.io/cordex-cmip6-c...](#)

Readme

BSD-3-Clause license

Activity

Custom properties

3 stars

5 watching

11 forks

[Report repository](#)

Releases

No releases published

[Create a new release](#)

Contributors 7

Model and institution registration

<https://github.com>

Registering Institutions,

To register your institution or model, please

- [New institution id](#)
- [New source id \(i.e. model\)](#)

These forms will automatically create a model distinguished by the `institution_id`. If `institution_id` is already registered by other institution, you must use a unique `source_id`.

To request changes in any other CV use the `source_id`: update MODEL123A for

To view current repository contents in the

target	URL
<code>institution_id</code>	CORDEX-CMIP6
<code>source_id</code>	CORDEX-CMIP6

The CVs build on logic that is described in the [document](#).

WCRP-CORDEX / cordex-cmip6-cv

<> Code Issues 14 Pull requests 2 Actions Projects Security Insights

Create new issue

Register a new model · [Choose a different template](#)

Add a title *

Assignees

No one assigned

Labels

Register source_id

Type

No type

Projects

No projects

Milestone

No milestone

source_id *

An identifier corresponding to `label` but with forbidden characters either removed or replaced by a hyphen (-). The `source_id` will appear in the ESGF search interface and in filenames and subdirectory names. Restrict characters used in `source_id` to letters, numbers and hyphens (e.g. NO dots, spaces or underscores are allowed). There is a limitation of 25 characters for this field.

source_type *

The type of model. Choose from the dropdown menu. If you feel that a new source type should be added, please, open first an issue requesting to update https://github.com/WCRP-CORDEX/cordex-cmip6-cv/blob/main/CORDEX-CMIP6_source_type.json

Think carefully about your model identifier (source_id)
Think of potential future versions/configurations

Archiving specifications (a.k.a. DRS) i.e. how to format the files (metadata, filenames)?

- Available in Zenodo. Check the [latest version](#) and potential [issues](#)
- + variable metadata in the data request (next slide)
- Please, report any issue you might find

CORDEX-CMIP6 Archiving Specifications for Dynamical Downscaling

21st March 2025

DOI: [10.5281/zenodo.15047096](https://doi.org/10.5281/zenodo.15047096)

Grigory Nikulin¹, Lars Bunttemeyer², Jesús Fernández³, Seth McGinnis⁴ and Jason P. Evans⁵

This document provides Data Reference Syntax (DRS) elements necessary for post-processing CORDEX-CMIP6 simulations and publishing them on the Earth System Grid Federation (ESGF). The document includes file and directory naming conventions, global attributes and ESGF Search Facets Mapping. Known issues are collected at <https://github.com/WCRP-CORDEX/archive-specifications/issues>. Newer versions of this document may exist. Find the latest version under <https://doi.org/10.5281/zenodo.10961068>.



Archiving specifications (a.k.a. DRS) i.e. how to format the files (metadata, filenames)?

- Available in Zenodo. Check the [latest version](#) and potential [issues](#)
- + variable metadata in the data request (next slide)
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14. Version history

Version	Date	Comment
v2	2025-03-21	<ul style="list-style-type: none">● Change of <code>project_id</code> (CORDEX to CORDEX-CMIP6) due to ESGF publication requirements (#22)● <code>mip_era</code> is excluded from the ESGF directory structure and search facets mapping, must be presented as the global attribute only (#24)● Fixed example for <code>creation_date</code> global attribute (#19)● New example (13.5) illustrating scalar coordinate variables for height (#18)● Specify time coordinate origin, but not specific formatting (#5)● Allow grid mapping variable to match the <code>grid_mapping_name</code> (#17)
v1	2024-04-10	Initial release on April, 10th, 2024.



Archiving specifications (a.k.a. DRS) i.e. how to format the files (metadata, filenames)?

- Available in Zenodo. Check the [latest version](#) and potential [issues](#)
- + variable metadata in the data request (next slide)
- Please, report any issue you might find
- Still needs refinements for ocean and other components

```
grid = "Rotated-pole latitude-longitude with 0.22 degree grid spacing"
```

```
grid = "Rotated-pole latitude-longitude with 0.11 degree grid spacing, interpolated by 2nd order conservative remapping from the original unstructured icosahedral ICON grid R13B05 (~12.1 km)"
```

```
grid = "Rotated-pole latitude-longitude with 0.22 degree grid spacing; ocean grid Mediterranean Sea only, 9-12 km with a tilted and stretched grid at the Gibraltar Strait"
```

Archiving specifications (a.k.a. DRS) i.e. how to format the files (metadata, filenames)?

- Available in Zenodo. Check the [latest version](#) and potential [issues](#)
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- Please, report any issue you might find
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6. CORDEX domains and horizontal coordinates

The CORDEX domains are defined in the [CORDEX domain tables](#). A domain must lie fully inside the RCM interior computational domain, i.e. in the area left once the relaxation zone is excluded. It is strongly recommended that RCMs using the rotated-pole coordinate system exactly follow the CORDEX grid definition provided. The rotated-pole coordinate system is always defined in terms of rotation of the North Pole in accordance with [CF-1.11](#). All variables from a simulation must be provided on the same grid (i.e., variables on staggered grids must be regridded to the standard grid). Zonal and meridional winds must be provided as real north- and eastward winds if the RCM uses a coordinate system/projection that does not coincide with real north- and eastward directions (e.g. the rotated pole, Lambert Conformal, etc.).

Data request

i.e. which variables to save?

- Currently, Med-CORDEX has tables in Zenodo for [atmosphere](#), [ocean](#), [river](#) and [aerosol](#) variables
- A central CORDEX data request is maintained as machine-readable CSV files in Github to track its development and allow automatic creation of consistent [CMOR tables](#) and MS Excel files
 - <https://github.com/WCRP-CORDEX/data-request-table>
 - Detailed cell_methods available
 - [Atmosphere](#) and [ocean](#) data requests added
 - [Aerosols](#), river, waves, biogeochemistry are pending
 - Merge into single dreq_MED.csv file with “realms” and Med-CORDEX priorities is pending ([WCRP-CORDEX/data-request-table#68](#))

CMOR

CMOR (Climate Model Output Rewriter) is a software library used to produce CF-compliant netCDF files following the DRS of CMIP (or CORDEX, with appropriate CMOR tables)

- “CMORise” is to make the output of a model comply with the DRS of a given initiative (via the CMOR library or by any other means).

- Example:

`CORDEX-CMIP6/DD/MED-12/CNRM/CNRM-ESM2-1/historical/r1i1p1f2/CNRM-RCSM6/v1-r1/mon/tos/v20250703/tos_MED-12_CNRM-ESM2-1_historical_r1i1p1f2_CNRM_CNRM-RCSM6_v1-r1_mon_198101-199012.nc`

- What kind of things typically go wrong?

Check e.g. the EURO-CORDEX internal [data problems](#)

Also, a commented example here

<https://github.com/Med-CORDEX/internal-data-request/pull/3>



CMOR (Climate Model Output Rewriter) is a software library used to produce CF-compliant netCDF files following the DRS of CMIP (or CORDEX, with appropriate CMOR tables)

- “CMORise” is to make the output of a model comply with the DRS of a given initiative (via the CMOR library or by any other means).

- Example:

`CORDEX-CMIP6/DD/MED-12/ICTP/EC-Earth3-Veg/historical/r1i1p1f2/RegCM-ES1-1/v1-r1/mon/tos/v20250703/tos_MED-12_EC-Earth3-Veg_historical_r1i1p1f2_ICTP_RegCM-ES1-1_v1-r1_mon_198101-199012.nc`

- What kind of things typically go wrong?

Check e.g. the EURO-CORDEX internal [data problems](#)

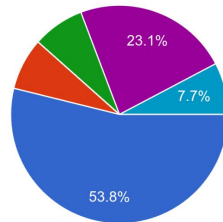
Also, a commented example here

<https://github.com/Med-CORDEX/internal-data-request/pull/3>

CMORisation workflow

- Not trivial. The CMOR library or other tools need to be connected to your model or be used to postprocess your raw output files

CMORisation experience
13 responses



- I don't know what CMORisation is
- We'd need help to get our data CMORised
- We already have a method to CMORise our data, but it is mostly manual work...
- We are developing a dedicated CMORization tool/workflow for our mo...
- We have a clear CMORisation workflow in place and working
- we have a CMORisation workflow for...

➤ CMORisation example from CNRM (Florence)

Internal data request

ENEA hosted the Med-CORDEX simulations in the transient phase, before the upload on the open database.

ENEA is currently not able anymore to host the Med-CORDEX-CMIP6 dataset for the internal data sharing within the community before the ESGF publication.

To discuss with the potential data hosts, we would need to have an **estimate of the data volume** to be hosted, i.e. the variables required for the studies planned.

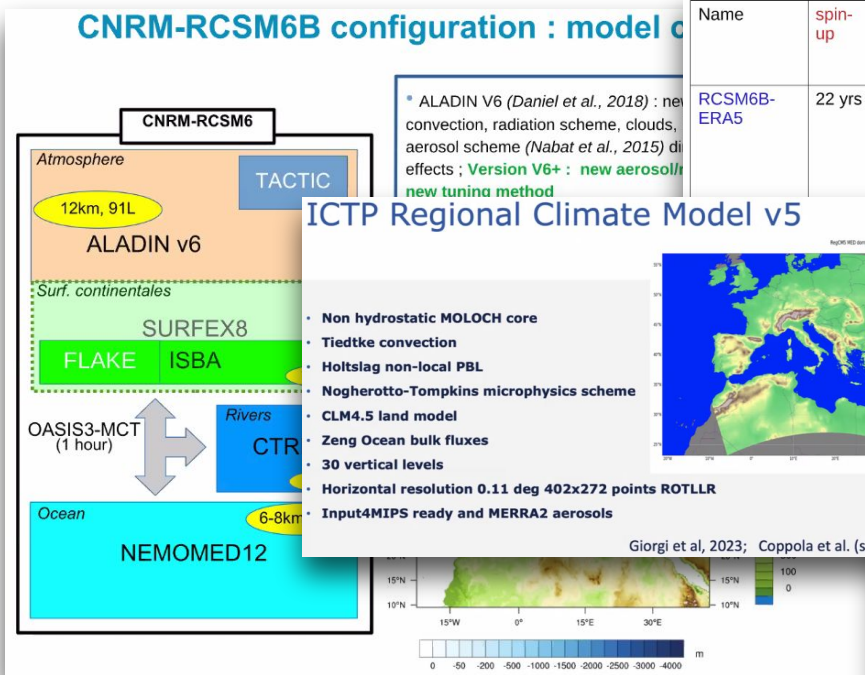


<https://github.com/Med-CORDEX/internal-data-request>

Med-CORDEX model documentation

How to provide homogenous information of the models?

Components	Implementation
RegCM /WRF + MITgcm +HD	MED-Cordex phase 2 15 km /20km / 1/12° 3 hr OA coupling
WRF + MITgcm + HD	MED-Cordex phase 3 (almost) 12km & 1/12° Ocean free surface Atlantic OBC ORAS5
WRF + MITgcm + CAMAfloat	MED-Cordex phase 3 (almost) 12km & 1/12° Ocean free surface Atlantic OBC ORAS5 Ocean spinup



Name	spin-up	Period	Atlantic lateral boundary condition	Atmospheric lateral boundary condition	River runoff	Chlorophyll
RCSM6B-ERA5	22 yrs	1980-2023 (to be continued)	Open boundaries ORAS5 (T, S, SSH)	ERA5, with spectral nudging	Coupled CTRIP (except for the Nile)	Clim 3D (Zhang et al., 2025)

Simulations design

Model	ICON-CLM (ICON version 2.6.5)
Domain	Med-CORDEX
Forcing data	ERA5
LBC Temporal resolution	1h
Configuration	<ul style="list-style-type: none"> Soil and vegetation model: TERRA-URB Radiation: EcRad. Microphysics: Single-moment scheme (inwp_gscp=2) Convection: In RCM: p...

NKUA MedX-CM components:

- **Loop1**
 - **Pick ra**
 - **Pick ra**
 - **Pick ra**
 - **Loop2**
 - **Repeat**
 - **Loop3**
- **WRF + Noah-MP:** 12 km / 45L
 - **NEMO (+ PISCES):** 1/12° (~7-9 km) / 50L
[Med & Black Seas explicitly connected]
 - **WaveWatch 3:** Shared mesh with NEMO
 - **HD:** $\Delta x, y = 1/12^\circ$ (under dev)
 - **OASIS coupler:** 1 hour / 1 day for HD river

Initial Conditions: MEDHYMAP
Boundary Conditions: ORAS5

Land:
I.C.: August 1987 from standalone

River:
I.C. : August 1978 from standalone

© Med-CORDEX team

Med-CORDEX model documentation

- <https://med-cordex.github.io/model-documentation>
- Based on Markdown files (free text) with YAML header (for metadata)
- Follows the new CMIP [Essential Model Documentation](#) (EMD)
- Extends the EMD in several ways (physics, time steps, extra components, feature representation, ...)
 - Shall we stay with EMD? It would be much simpler
 - Propose a lighter extension?
 - <https://github.com/Med-CORDEX/model-documentation/issues>
- System ready to start documenting your model

Other resources that could be coordinated

Errata

- Use github issues?
- Example from CORDEX FPS-CONV
 - [Issue template](#) to report the problem
 - Follow on discussion/resolution
 - Potential to create reports (e.g. [PDF to upload in Zenodo](#))

Science monitoring

- Under a common centralized bibliographic tool (Zotero)
<https://www.zotero.org/groups/5816477/wcrp-cordex/library>
- All details using just the DOI. No worries about formatting
- Classify using collections or tags as you like
- Potential to render in different ways and get stats
 - E.g. mimicking the existing website in [GitHub Pages](#)
<https://med-cordex.github.io/publications/publications.html>



Action items

- Locate and update status of simulations planned with past completion dates
- Register your model and institution
- Share your Github account (fill out the survey of the session)

Aim to have at least one per modelling team

- Help define the model documentation structure (several open issues)
- Document your modelling system
- Read and follow the CORDEX-CMIP6 archiving specifications. Anything missing for Med-CORDEX?
- Keep new publications up to date

Hands-on time!



Try one of these:

- Register your model and/or institution
<https://github.com/WCRP-CORDEX/cordex-cmip6-cv>
- Start improving your model documentation
<https://github.com/Med-CORDEX/model-documentation>
- Open an issue to request data for your paper
<https://github.com/Med-CORDEX/internal-data-request/issues>
- Contribute to the discussions in:
<https://github.com/Med-CORDEX/model-documentation/issues>
<https://github.com/WCRP-CORDEX/archive-specifications/milestone/4>

Use the [Google Doc collecting questions](#) to solve any doubt.

We'll be answering there.

Additional material

Proposing a change (Fork + PR)

The screenshot shows a GitHub pull request interface. At the top, the repository is identified as 'Med-CORDEX / model-documentation'. A search bar and navigation icons are visible. Below the repository name, navigation tabs include 'Code', 'Issues' (with a count of 6), 'Pull requests', 'Actions', 'Projects', 'Security', and 'Insights'. The left sidebar shows a file tree with folders like '_data', '_includes', '_layouts', and '_models'. The file 'CNRM-RCSM6B.md' is selected. The main content area shows the file path 'model-documentation / _models / CNRM-RCSM6B.md' and a commit by 'jesusff' titled 'Further adjustments towards EMD spirit'. The commit message is 'cedf590 - last week'. Below the commit, there are tabs for 'Preview', 'Code', and 'Blame'. The 'Preview' tab is active, showing a red error message: 'Error in user YAML: Alias parsing is not enabled.' Below the error, the YAML content is displayed: --- name: CNRM-RCSM6B family: CNRM-RCSM dynamic_components: - aerosol - atmosphere - land_surface - ocean - sea_ice prescribed_components: ---

Proposing a change (Fork + PR)

The screenshot shows the GitHub interface for the repository 'Med-CORDEX / model-documentation'. The breadcrumb path is 'model-documentation / _models / CNRM-RCSM6B.md' in the 'main' branch. A central message states: 'You need to fork this repository to propose changes. Sorry, you're not able to edit this repository directly—you need to fork it and propose your changes from there instead.' Below this message is a green button labeled 'Fork this repository' and a blue link 'Learn more about forks'. On the left sidebar, the 'Files' section is expanded to show the directory structure: '_data', '_includes', '_layouts', and '_models'. The file 'CNRM-RCSM6B.md' is selected and highlighted.

Med-CORDEX / model-documentation

Type to search

<> Code Issues 6 Pull requests Actions Projects Security Insights

Files

main

Go to file

- > _data
- > _includes
- > _layouts
- ▼ _models
 - CNRM-RCSM6B.md
 - ENEA-REG3.md
- > images
 - README.md
 - _config.yaml
 - index.md

model-documentation / _models / CNRM-RCSM6B.md in main

You need to fork this repository to propose changes.

Sorry, you're not able to edit this repository directly—you need to fork it and propose your changes from there instead.

Fork this repository

[Learn more about forks](#)

Proposing a change (Fork + PR)

The screenshot shows the GitHub interface for the repository `Med-CORDEX / model-documentation`. A navigation bar at the top includes links for Code, Issues (6), Pull requests, Actions, Projects, Security, and Insights. A search bar is also present. A light blue notification banner states: "You're making changes in a project you don't have write access to. Submitting a change will write it to a new branch in your fork **jesusff-test/model-documentation**, so you can send a pull request." The text `jesusff-test/model-documentation` is circled in red. Below the banner, the file path `model-documentation / _models / CNRM-RCSM6B.md` is shown, with `in main` indicating the current branch. Buttons for "Cancel changes" and "Commit changes..." are visible. The file editor is in "Edit" mode, showing a YAML configuration for the model. A yellow callout box with a pointer to the editor contains the text "Now you can edit the file". At the bottom, a footer provides keyboard shortcuts for navigation and file attachment.

Code content:

```
1 ---
2 name: CNRM-RCSM6B
3 family: CNRM-RCSM
4 dynamic_components:
5   - aerosol
6   - atmosphere
7   - land_surface
8   - ocean
9   - sea_ice
10 prescribed_components:
11 omitted_components:
12   - atmospheric_chemistry
```

Footer text: Use `Control + Shift + m` to toggle the `tab` key moving focus. Alternatively, use `esc` then `tab` to move to the next interactive element on the page.

Proposing a change (Fork + PR)

Med-CORDEX / **model-documentation**

Q Type to search

<> **Code** Issues 6 Pull requests Actions Projects Security Insights

You're making changes in a project you don't have write access to. Submitting a change will write it to a new branch in your fork **jesusff-test/model-documentation**, so you can send a pull request.

model-documentation / `_models` / CNRM-RCSM6B.md in `main` Cancel changes **Commit changes...**

Edit Preview Spaces 2 Soft wrap

```
1 ---
2 name: CNRM-RCSM6B
3 family: CNRM-RCSM
4 dynamic_components:
5   - aerosol
6   - atmosphere
7   - land_surface
8   - ocean
9   - sea_ice
10 prescribed_components:
11 omitted_components:
12   - atmospheric_chemistry
```

Use `control + shift + m` to toggle the `tab` key moving focus. Alternatively, use `esc` then `tab` to move to the next interactive element on the page.

Attach files by dragging & dropping, selecting or pasting them.

Proposing a change (Fork + PR)

The screenshot shows the GitHub web interface for a repository named 'Med-CORDEX / model-documentation'. A modal dialog titled 'Propose changes' is open in the center. The dialog has a close button (X) in the top right corner. It contains a 'Commit message' field with the text 'Update CNRM-RCSM6B.md' and an 'Extended description' field with the placeholder text 'Add an optional extended description...'. At the bottom of the dialog are 'Cancel' and 'Propose changes' buttons. In the background, the code editor shows a YAML file with the following content:

```
1 ---
2 name: CNRM-RCSM6B
3 family: CNRM-RCSM
4 dynamic_components:
5   - aerosol
6   - atmosphere
7   - land_surface
8   - ocean
9   - sea_ice
10 prescribed_components:
11 omitted_components:
12   - atmospheric_chemistry
```

At the bottom of the page, there is a footer with the text: 'Use `control + shift + m` to toggle the `tab` key moving focus. Alternatively, use `esc` then `tab` to move to the next interactive element on the page.' and 'Attach files by dragging & dropping, selecting or pasting them.'

Proposing a change (Fork + PR)

You're making changes in a project you don't have write access to, so you can send a pull request.

model-documentation / _models / CNRM-RCSM6B

Propose changes

Commit message

Add some text to spin-up strategy in CNRM-RCSM6B.md

Extended description

Just a test to create a PR by forking the repo with an account without write permissions. The text needs to be completed.

Cancel Propose changes

Write a meaningful commit message:

- **What** did you change exactly?
- **Why** did you change it?

Use `control + shift + m` to toggle the `tab` key moving focus. Alternatively, use `esc` then `tab` to move to the next interactive element on the page.

Attach files by dragging & dropping, selecting or pasting them.

Proposing a change (Fork + PR)

The screenshot shows the GitHub interface for a pull request. At the top, the repository is identified as 'Med-CORDEX / model-documentation'. The navigation bar includes links for Code, Issues (6), Pull requests, Actions, Projects, Security, and Insights. The main heading is 'Comparing changes', with a subtext explaining the purpose of the comparison. Below this, a comparison bar shows the base repository as 'Med-CORDEX/model-documentation' on the 'main' branch, and the head repository as 'jesusff-test/model-documentation' on the 'patch-1' branch. A prominent green 'Create pull request' button is visible. Below the button, summary statistics show '1 commit', '1 file changed', and '1 contributor'. A commit history section shows a commit from July 2, 2025, titled 'Add some text to spin-up strategy in CNRM-RCSM6B.md', authored by 'jesusff-test'. At the bottom, it indicates 'Showing 1 changed file with 2 additions and 0 deletions' and provides options for 'Split' and 'Unified' views.

Med-CORDEX / model-documentation

Q Type to search

<> Code Issues 6 Pull requests Actions Projects Security Insights

Comparing changes

Choose two branches to see what's changed or to start a new pull request. If you need to, you can also [compare across forks](#) or [learn more about diff comparisons](#).

base repository: Med-CORDEX/model-documen... base: main head repository: jesusff-test/model-documentation compare: patch-1

Discuss and review the changes in this comparison with others. [Learn about pull requests](#) **Create pull request**

1 commit 1 file changed 1 contributor

Commits on Jul 2, 2025

Add some text to spin-up strategy in CNRM-RCSM6B.md Verified 92acf83 <>

jesusff-test authored now

Showing 1 changed file with 2 additions and 0 deletions. Split Unified

2 _models/CNRM-RCSM6B.md <> ...

Proposing a change (Fork + PR)

Open a pull request

Create a new pull request by comparing changes across two branches. If you need to, you can also [compare across forks](#). [Learn more about diff comparisons here](#).

base repository: Med-CORDEX/model-documen... base: main ← head repository: jesusff-test/model-documentation compare: patch-1

Add a title

Add some text to spin-up strategy in CNRM-RCSM6B.md

Add a description

Write Preview H B I ≡ <> 🔗 ⋮ ⋮ ⋮ 🗑️ @ 🗨️

Just a test to create a PR by forking the repo with an account without write permissions. The text needs to be completed.

You can change the title and description of your PR:

- What is the ultimate purpose?
- Comments for the repo maintainers:
 - Why should they consider this change?
 - Any pending problems?
 - Ask for help
 - ...

Proposing a change (Fork + PR)

The screenshot shows the GitHub interface for creating a pull request. At the top, the repository is identified as 'Med-CORDEX / model-documentation'. A search bar is present with the placeholder text 'Type to search'. Below the search bar, navigation tabs include 'Code', 'Issues' (with a count of 6), 'Pull requests', 'Actions', 'Projects', 'Security', and 'Insights'. The main heading is 'Open a pull request', followed by a sub-heading: 'Create a new pull request by comparing changes across two branches. If you need to, you can also [compare across forks](#). [Learn more about diff comparisons here](#).' Below this is a configuration bar for the pull request, showing 'base repository: Med-CORDEX/model-documen...', 'base: main', 'head repository: jesusff-test/model-documentation', and 'compare: patch-1'. The 'Add a title' section contains a text input field with the text 'Improve CNRM-RCSM6B description'. To the right, under 'Helpful resources', there is a link to 'GitHub Community Guidelines'. The 'Add a description' section features a rich text editor with a toolbar containing icons for bold, italic, link, list, and other formatting options. The text area contains the text: 'Just a test to create a PR by forking the repo with an account withot write permissions. The text needs to be completed.'

Med-CORDEX / model-documentation

Q Type to search

<> Code Issues 6 Pull requests Actions Projects Security Insights

Open a pull request

Create a new pull request by comparing changes across two branches. If you need to, you can also [compare across forks](#). [Learn more about diff comparisons here](#).

base repository: Med-CORDEX/model-documen... base: main ... head repository: jesusff-test/model-documentation compare: patch-1

Add a title

Improve CNRM-RCSM6B description

Helpful resources

[GitHub Community Guidelines](#)

Add a description

Write Preview H B I ≡ <> [🔗](#) ≡ ≡ ≡ [📎](#) [@](#) [🗨](#) [↩](#) [📄](#)

Just a test to create a PR by forking the repo with an account withot write permissions. The text needs to be completed.

Proposing a change (Fork + PR)

base repository: Med-CORDEX/model-documen... base: main ... head repository: jesusff-test/model-documentation compare: patch-1



Add a title

Improve CNRM-RCSM6B description

Helpful resources

[GitHub Community Guidelines](#)

Add a description

Write Preview H B I

Just a test to create a PR by forking the repo with an account withot write permissions. The text needs to be completed.

Markdown is supported Paste, drop, or click to add files

Allow edits by maintainers

Proposing a change (Fork + PR)

The screenshot shows a GitHub Pull Request (PR) interface. At the top, the repository is identified as 'Med-CORDEX / model-documentation'. The navigation bar includes 'Code', 'Issues 6', 'Pull requests 1' (highlighted with a red circle), 'Actions', 'Projects', 'Security', and 'Insights'. The PR title is 'Improve CNRM-RCSM6B description #7'. Below the title, a green 'Open' button is next to the text 'jesusff-test wants to merge 1 commit into Med-CORDEX:main from jesusff-test:patch-1', which is circled in red. The PR details show 'Conversation 0', 'Commits 1', 'Checks 0', and 'Files changed 1'. A comment from 'jesusff-test' is visible, stating: 'Just a test to create a PR by forking the repo with an account without write permissions. The text needs to be completed.' Below the comment is a commit link: 'Add some text to spin-up strategy in CNRM-RCSM6B.md' with a 'Verified' badge and commit hash '92acf83'. On the right side, the 'Reviewers' section shows 'No reviews' and a link to 'Convert to draft'. The 'Assignees' section shows 'No one assigned'. The 'Labels' section shows 'None yet'. The 'Projects' section shows 'None yet'. At the bottom, there is a green box with a checkmark and the text 'No conflicts with base branch' and 'Changes can be cleanly merged.' Below this is an 'Add a comment' input field.