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Why do we need the namelist-tool?

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What's the aim of the tool?

- Availability of standard configurations
- Fast access to namelist parameter descriptions
- Efficient inter-comparison of configurations across model versions
- Support of preparation of own configurations



1. Input data

- Operational NWP configurations
- CLM-Community reference configurations
- Namelist parameter description for:
 - INT2LM
 - COSMO
 - COSMO-CLM

2. Overview of the functionality



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Functionality of the Tool

- Find
- Show
- Compare
- Upload of own configurations
- Dependencies

Availability



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- For all COSMO and COSMO-CLM users:

members of beginners
[More...](#)

Moving groups and a
variety of communication
ways.
Rules arrange the
collaboration.
[More...](#)

development
[More...](#)

EVENTS

The main events
organized by the
community are the yearly
Assembly, User Training
and the User Seminar.
[More...](#)

OUTCOME

The wide use of
COSMO-CLM is reflected
by in the increasing
number of publications.
[More...](#)

ARCHIVE

Community members
have access to the
archive of the events,
documents, newsletter,
etc.
[More...](#)

www.clm-community.eu

[Logos](#) | [Namelist-tool](#)

www.cosmo-model.org/content/tasks/operational

Availability

CHOOSE YOUR MODEL

INT2LM COSMO

iguration

You can choose between different groups of model configurations

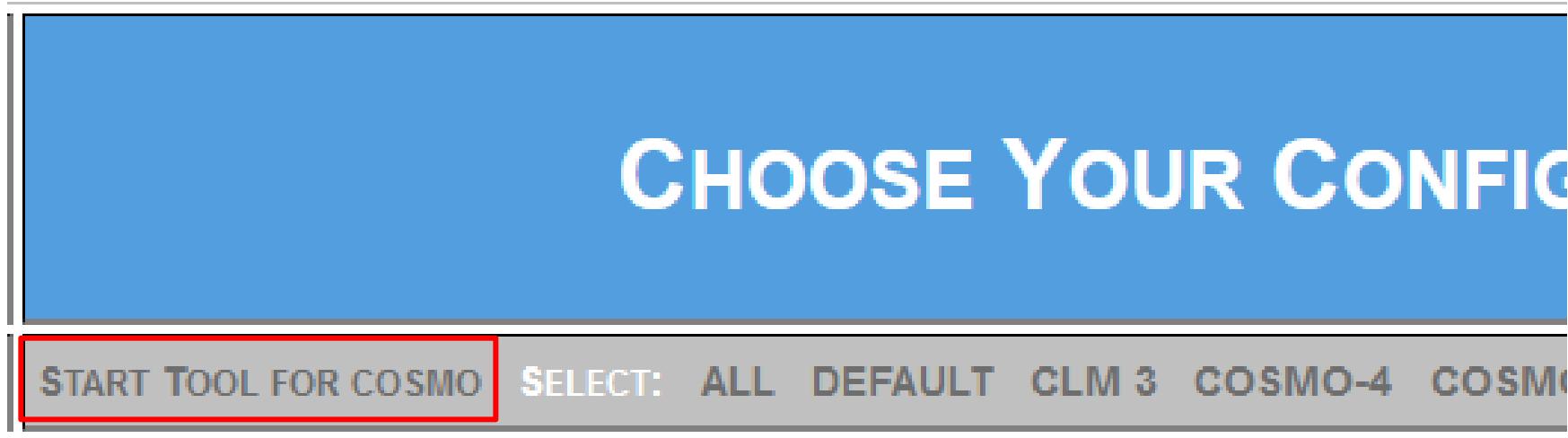
and all reference configurations for the preparation of the time invariant data describing the properties of the parameters. They are used by int2lm for preparation of initial and boundary conditions.

and all reference configurations for preparation of initial and boundary conditions of the COSMO model and together with one or more of the reference COSMO (or CLM) configurations for NWP, CLM or ART appli

Availability

COSMO-4			
Selection	Namelist (Download)	Author	Description
<input checked="" type="checkbox"/>	cosmo-DE-2011120500 4.19	DWD	This is the operational configuration of the DWD at resolution in the domain of Germany for the model
<input type="checkbox"/>	cosmo-DE-2012070100 4.22	DWD	This is the operational configuration of the DWD at resolution in the domain of Germany for the model
<input checked="" type="checkbox"/>	cosmo-EU-2011120500 4.19	DWD	This is the operational configuration of the DWD at resolution in the domain of Europe for the model version cosmo-4.19. It is used as initial and boundary conditions for COSMO-DE-2011120500.
<input checked="" type="checkbox"/>	cosmo-EU-2012070100 4.22	DWD	This is the operational configuration of the DWD at resolution in the domain of Europe for the model version cosmo-4.22. It is used as initial and boundary conditions for COSMO-DE-2012070100.
<input type="checkbox"/>	cosmo-SW2 20130608 4.19	MeteoSwiss	This is the operational configuration for NWP of MeteoSwiss at horizontal resolution in the domain of Switzerland.
<input type="checkbox"/>	cosmo-SW7 20130608 4.19	MeteoSwiss	This is the operational configuration of MeteoSwiss at horizontal resolution in the domain of Europe.
<input type="checkbox"/>	cosmo-RO2.8 20130702 4.25	NMA Romania	This is the operational configuration for NWP of NI Romania at horizontal resolution in the domain of Romania. It is based on the configuration of DWD.

‘Show’ function



d all reference configurations for the COSMO model in NWP, CLM or ITC n
found following the corresponding link below. The namelist for the preparat
vention for the configuration is MODEL-CONFIG_VERSION_DATE, where
configuration, VERSION is the version of the model used and DATE is the
applications.

Availability



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NAMELIST-TOOL 12.02.2015 : Beta 0.9.1.8 Tool: Beta 0.9.1.8 27.02.2015 : Beta 0.9.3.5 Description: Beta 0.9.3.5 CHANGE-LOG	COSMO NAMELISTS: LMGRID RUNCTL DYNCTL PHYCTL TUNING DIACTL NUDGING INICTL EPSCTL IOCTL DATABASE GRIBIN GRIBOUT-1 GRIBOUT-2 GRIBOUT-3 GRIBOUT-4 GRIBOUT-5 GRIBOUT-6 GRIBOUT-7 SATCTL																																							
	CHOOSE YOUR CONFIGURATIONS <input type="checkbox"/> COSMO-DE-2011120500_4.19 <input type="checkbox"/> COSMO-EU-2011120500_4.19 <input type="checkbox"/> COSMO-EU-2012070100_4.22																																							
FIND varName	SHOW COMPARE UPLOAD PRINT VIEW RESET ... DEPENDENCIES (INCOMPLETE) DOCUMENTATION FEEDBACK																																							
Cosmo-All namelists There are many different "versions" of Cosmo model, since all the consortium members run the model according to their specific needs and using their own configuration (some times more than one, e.g. one 7km and one 2.8km version). The most "immediate" difference among such "versions" come from the different run-time configuration options each centre uses. These options, are formated as Fortran namelist variables. The configuration namelists are these: <table><thead><tr><th>Name</th><th>Usage</th><th>Variables</th></tr></thead><tbody><tr><td>LMGRID</td><td>specifying the domain and the size of the grid</td><td>10</td></tr><tr><td>RUNCTL</td><td>parameters for the model run</td><td>53</td></tr><tr><td>DYNCTL</td><td>parameters for the adiabatic model</td><td>74</td></tr><tr><td>PHYCTL</td><td>parameters for the diabatic model</td><td>72</td></tr><tr><td>TUNING</td><td>parameters for tuning dynamics and physics</td><td>37</td></tr><tr><td>DIACTL</td><td>parameters for the diagnostic calculations</td><td>20</td></tr><tr><td>NUDGING</td><td>controlling the data assimilation</td><td>237</td></tr><tr><td>INICTL</td><td>parameters for the initialization of model variables</td><td>6</td></tr><tr><td>EPSCTL</td><td>controlling the ensemble prediction mode</td><td>12</td></tr><tr><td>IOCTL</td><td>controlling the environment</td><td>35</td></tr><tr><td>DATABASE</td><td>specification of database job</td><td>9</td></tr><tr><td>GRIBIN</td><td>controlling the grib input</td><td>41</td></tr></tbody></table>		Name	Usage	Variables	LMGRID	specifying the domain and the size of the grid	10	RUNCTL	parameters for the model run	53	DYNCTL	parameters for the adiabatic model	74	PHYCTL	parameters for the diabatic model	72	TUNING	parameters for tuning dynamics and physics	37	DIACTL	parameters for the diagnostic calculations	20	NUDGING	controlling the data assimilation	237	INICTL	parameters for the initialization of model variables	6	EPSCTL	controlling the ensemble prediction mode	12	IOCTL	controlling the environment	35	DATABASE	specification of database job	9	GRIBIN	controlling the grib input	41
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‘Show’ function



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Problem: You want to see ‘cosmo-EU-2011120500_4.19’ and
‘cosmo-EU-2012070100_4.22’.

Solution: Use the ‘show’ function
- shows all parameters of one or more
configuration files

'Show' function

The screenshot shows a web-based interface for viewing Cosmo namelists. At the top, a blue header bar lists various namelist sections: COSMO NAMELISTS: LMGRID RUNCTL DYNCTL PHYCTL TUNING DIACTL NUDGING INICTL EPSCTL IO, followed by GRIBOUT-5, GRIBOUT-6, GRIBOUT-7, and SATCTL. Below this is a grey section titled "CHOOSE YOUR CONFIGURATIONS" containing three checkboxes: COSMO-DE-2011120500_4.19 (unchecked), COSMO-EU-2011120500_4.19 (checked), and COSMO-EU-2012070100_4.22 (checked). At the bottom of this section are five buttons: SHOW (highlighted with a red box), COMPARE, UPLOAD, PRINT VIEW, and RESET.

Cosmo-All namelists

There are many different "versions" of Cosmo model, since all the consortium members run the model with their own configuration (some times more than one, e.g. one 7km and one 2.8km version).

The most "immediate" difference among such "versions" come from the different run-time configurations of the Fortran namelist variables. The configuration namelists are these:

Name	Usage	Variables
LMGRID	specifying the domain and the size of the grid	10
RUNCTL	parameters for the model run	53
DYNCTL	parameters for the adiabatic model	74

'Show' function

Namelist NUDGING		
Var	cosmo-EU-2011120500_4.19 (cosmo-default_4.19)	cosmo-EU-2012070
lnudge	.true.	.true.
nudgsta	0	0
nudgend	0	0
lverif	.true.	.true.
lverpas	.TRUE.	.TRUE.
lldvar	N/A	N/A
nversta	0	0
nverend	0	0
mruntyp	2	2
mveripr	N/A	2

- **Bold black:** explicitly specified in configuration file
- **Red:** not explicitly specified, default value of the corresponding model version shown
- **Grey:** N/A, not available in this particular model version

'Show' function

Namelist NUDGING		
Var	cosmo-EU-2011120500_4.19 (cosmo-default_4.19)	cosmo-EU-2012070
lnudge	.true.	.true.
nudgsta	0	0
nudgend	0	0
lverif	.true.	.true.
lverpas	.TRUE.	.TRUE.
lldvar	N/A	N/A
nversta	0	0
nverend	0	0
mruntyp	2	2
mveripr	N/A	2

- **Bold black:** explicitly specified in configuration file
- **Red:** not explicitly specified, default value of the corresponding model version shown
- **Grey:** N/A, not available in this particular model version

'Show' function

Namelist NUDGING

Var	cosmo-EU-2011120500_4.19 (cosmo-default_4.19)	cosmo-EU-2012070
lnudge	.true.	.true.
nudgsta	0	0
nudgend	0	0
lverif	.true.	.true.
lverpas	.TRUE.	.TRUE.
lldvar	N/A	N/A
nversta	0	0
nverend	0	0
mruntyp	2	2
nveripr	N/A	2

- **Bold black:** explicitly specified in configuration file
- **Red:** not explicitly specified, default value of the corresponding model version shown
- **Grey:** N/A, not available in this particular model version

‘Compare’ function



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Problem:

The parameter list is too long to find all the differences between the configurations selected.

Solution:

Use the ‘compare’ function

- it hides all equal parameters of chosen configuration files

'Compare' function

The screenshot shows a user interface for comparing model configurations. At the top, there are two configuration names: 'SMO-DE-2011120500_4.19' and 'COSMO-EU-2011120500_4.19'. Both names have a checked checkbox next to them, which is highlighted with a red box. Below these, there is another configuration name: 'COSMO-EU-2012070100_4.22', also with a checked checkbox highlighted by a red box. Below the configuration names is a horizontal menu bar with four items: 'COMPARE', 'UPLOAD', 'PRINT VIEW', and 'RESET'. The 'COMPARE' button is highlighted with a red box. To the right of the menu is a dropdown menu icon.

No-All namelists

There are many different "versions" of Cosmo model, since all the consortium members run their own configuration (some times more than one, e.g. one 7km and one 2.8km version).

Most "immediate" difference among such "versions" come from the different run-time configurations as Fortran namelist variables. The configuration namelists are these:

	<u>Usage</u>	<u>Variables</u>
>ID	specifying the domain and the size of the grid	10
>TL	parameters for the model run	53
>TL	parameters for the adiabatic model	74

'Compare' function

Namelist RUNCTL		
Var	cosmo-EU-2011120500_4.19 (cosmo-default_4.19)	cosmo-EU-2012070100_4.22 (cosmo-default_4.22)
ydate_ini	'2011120500'	'2012070100'
ydate_bd	'2011120500'	'2012070100'
Namelist DYNCTL		
Var	cosmo-EU-2011120500_4.19 (cosmo-default_4.19)	cosmo-EU-2012070100_4.22 (cosmo-default_4.22)
l_diff_Smag	N/A	.false.
Namelist PHYCTL		
Var	cosmo-EU-2011120500_4.19 (cosmo-default_4.19)	cosmo-EU-2012070100_4.22 (cosmo-default_4.22)
ltkecon	N/A	FALSE
Namelist TUNING		
Var	cosmo-EU-2011120500_4.19 (cosmo-default_4.19)	cosmo-EU-2012070100_4.22 (cosmo-default_4.22)
mu_rain	0.5	0.0
rain_n0_factor	N/A	1.0

‘Find’ function

Problem: There is a difference in ‘Itkecon’ but you have no idea what is behind this parameter.

Solution: Use the ‘find’ function

- you’ll get a description of the parameter
- you’ll get the default value
- you only have to type a few letters to find the parameter

'Find' function

The screenshot shows a software interface with a blue header bar. On the left, there's a sidebar with version information: TOOL: BETA 0.9.1.8, 12.02.2015, and DESCRIPTIONS: BETA 0.9.2.5. Below this is a 'CHANGE-LOG' section. A red box highlights the 'FIND' button, which has the text 'ltke' entered into its search field.

The main area is titled 'CHOOSE YOUR CONFIGURATIONS' and contains two checkboxes: one for 'COSMO-DE-2011120500_4.19' (unchecked) and one for 'COSMO-EU-20111205' (checked). Below this are navigation links: SHOW, COMPARE, UPLOAD, PRINT, VIEW, and RESET.

The bottom right section displays three lists of namelist parameters:

- Namelist RUNCTL**: Var, ydate_ini, ydate_bd
- Namelist DYNCTL**: Var, l_diff_Smag
- Namelist PHYCTL**: Var, ltkecon

'Find' function



Parameter

[limItkediff \(PHYCTL\)](#)

[Itkesso \(PHYCTL\)](#)

[Itkecon \(PHYCTL\)](#)

Description

Switch to include horizontal turbulent diffusion. ...

Switch, to calculate SSO-wake turbulence production for TKE. ...

Switch to consider convective buoyancy production for TKE. ...

Name	Type	Definition / Purpose / Comments	Default	Depend.
ltkecon	LOG	Switch to consider convective buoyancy production for TKE. Implemented in Version 4.20.	. FALSE .	-
itype_sher	INT	Type of shear production for TKE. Implemented in Version 4.10. 1: Only vertical shear. 2: Full isotropic 3D-shear. 3: Vertical shear and separated horizontal shear mode.	1	-

‘Upload’ function



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Problem: You have a ‘yuspecif’ configuration (cosmo_5.0) and want to figure out the differences to 'cosmo-DE_140424_5.0' .

Solution: Upload it to the namelist-tool

- you can use all functions from the namelist tool
- you are the only one who can see the uploaded file

'Upload' function

COSMO NAMELISTS: LMGRID RUNCTL DYNCTL PHY
GRIBOUT-3 GRIBOUT-4 GRIBOUT-5 GRIBOUT-6 GRIBO

CHOOSE YOUR CONFIGURATIONS

COSMO-DEFAULT_5.0 COSMO-DE_140424_5.0

SHOW COMPARE **UPLOAD** PRINT VIEW RESET

Cosmo-All namelists

There are many different "flavours" of Cosmo and

'Upload' function

Upload of personal Namelist (not visible for other users)

Upload: Namelist / Default

Enter ID for your namelist:

Enter Model Version:

Namelist:

--

Select the type of your upload file:

Please Select

Select default for Namelist:

cosmo-default_4.8_clm17

Select file:

Durchsuchen...

Keine Datei ausgewählt.

Submit

'Upload' function

Upload of personal Namelist (not visible for other users)

Upload: Namelist / Default

Enter ID for your namelist:

Enter Model Version:

Namelist:

Select the type of your upload file:

Select default for Namelist:

- Please Select
- Please Select
- Namelist / Runscript
- YUSPECIF**

Select file: Keine Datei ausgewählt.

'Upload' function



Upload of personal Namelist (not visible for other users)

Upload: Namelist / Default

Enter ID for your namelist:

Enter Model Version:

Namelist:

Select the type of your upload file:

Select default for Namelist:

Select file:

- cosmo-default_4.8_clm17
- cosmo-default_4.19
- cosmo-default_4.22
- cosmo-default_4.25
- cosmo-default_4.27
- cosmo-default_5.0**
- cosmo-default_5.01

'Upload' function

Upload of personal Namelist (not visible for other users)

Upload: Namelist / Default

Enter ID for your namelist:

Enter Model Version:

Namelist:

Select the type of your upload file:

Select default for Namelist:

Select file: YUSPECIF

‘Upload’ function

The screenshot shows the NAMELIST-TOOL interface. On the left, there's a sidebar with 'NAMELIST-TOOL' at the top, followed by version history: '12.02.2015 : Tool: Beta 0.9.1.8', '27.02.2015 : Description: Beta 0.9.3.5', and a 'CHANGE-LOG' section. Below this is a search bar with 'FIND varName'. To the right, under 'COSMO NAMELISTS:', a list includes 'LMGRID RUNCTL DYNCTL PHYCTL TUNING DIACTL NUDGIN', 'GRIBOUT-5 GRIBOUT-6 GRIBOUT-7 SATCTL', and 'CHOOSE YOUR CONFIGURATIONS' with three options: 'COSMO-DEFAULT_5.0', 'COSMO-DE_140424_5.0', and 'CCLM-SEEMAN_5.0' (the last one is highlighted with a red box). At the bottom, a menu bar offers 'SHOW COMPARE UPLOAD UPLOAD-LOG DELETE UPLOADS PRINT VIEW RESET'. A large text block below the menu reads:

Cosmo-All namelists

There are many different "versions" of Cosmo model, since all the consortium configuration (some times more than one, e.g. one 7km and one 2.8km vers

The most "immediate" difference among such "versions" come from the diffe Fortran namelist variables. The configuration namelists are these:

- Visible for the user and on the computer on which it was uploaded only!!!

‘Feedback’ function



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Problem:

There is no description for a namelist-parameter, or
the information given is confusing, or
you found a bug, or
you like to suggest a new namelist-tool functionality.

Solution:

Use the ‘feedback’ function

- you can upload a note
- you can upload a screenshot

'Feedback' function

Feedback

If there are any Problems with the namelist tool or functions you want to have implementet please leave a note or check the [feedback history](#).

Name*:

Tom Seemann

E-Mail:

seematom@tu-cottbus.de

Screenshot:

Durchsuchen...

Keine Datei ausgewählt.

Type of Feedback:

Functionality ▾

Message*:

This is an example feedback.

3. Ongoing work

- ‘dependency’ function
- new configurations
- improvement of usability



‘Dependency’ function



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Problem: You want to see the parameters which depend on region, resolution or time step

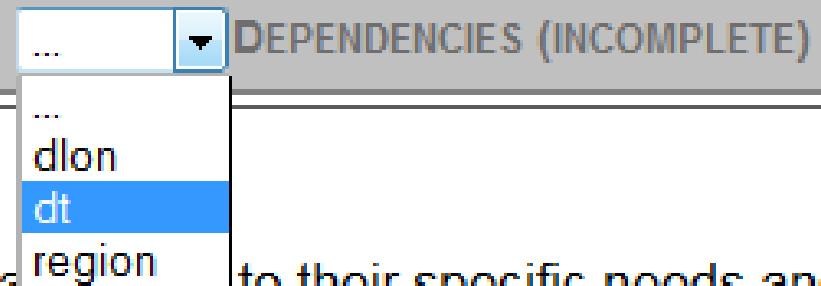
Solution: Use the ‘dependency’ function

- it shows all dependend parameters
- is based on expert knowledge

'Dependency' function

MACTL NUDGING INICTL EPSCTL IOCTL DATABASE GRIBIN GRIBOUT-1 GRIBOUT-2

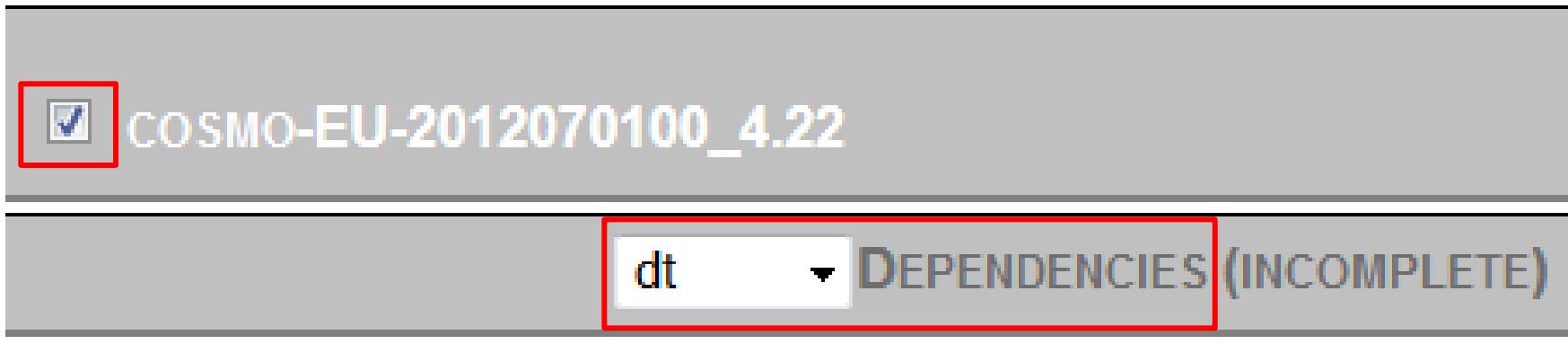
COSMO-EU-2012070100_4.22



The consortium members run the model according to their specific needs and the 2.8km version).

from the different run-time configuration options each centre uses. These options:

‘Dependency’ function



the consortium members run the model according to their standards one 2.8km version).

from the different run-time configuration options each center lists are these:

‘Dependency’ function

Namelist DYNCTL

Var	cosmo-EU-2012070100_4.22 (cosmo-default_4.22)
crltau (dt)	1.0
nrdtau (dt)	5
hincrads (dt)	1.0
mincrads (dt)	0

- Shows parameters, which need to be adjusted together with the dependend parameter.
- Based on expert knowledge

Last but not least



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- All results of comparisons might contain errors
- Might be misinterpreted

Therefore: We do not take over the responsibility for mistakes, errors or unwanted simulations resulting from usage of the namelist-tool.

The tool results cannot replace your expertise !

Support



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- Andreas Will: will@tu-cottbus.de
- Tom Seemann: seematom@tu-cottbus.de
- ‘Feedback’ button
- Update frequency: 2 - 4 times a month

We are looking forward to your feedbacks