

EXTPAR

Releases history

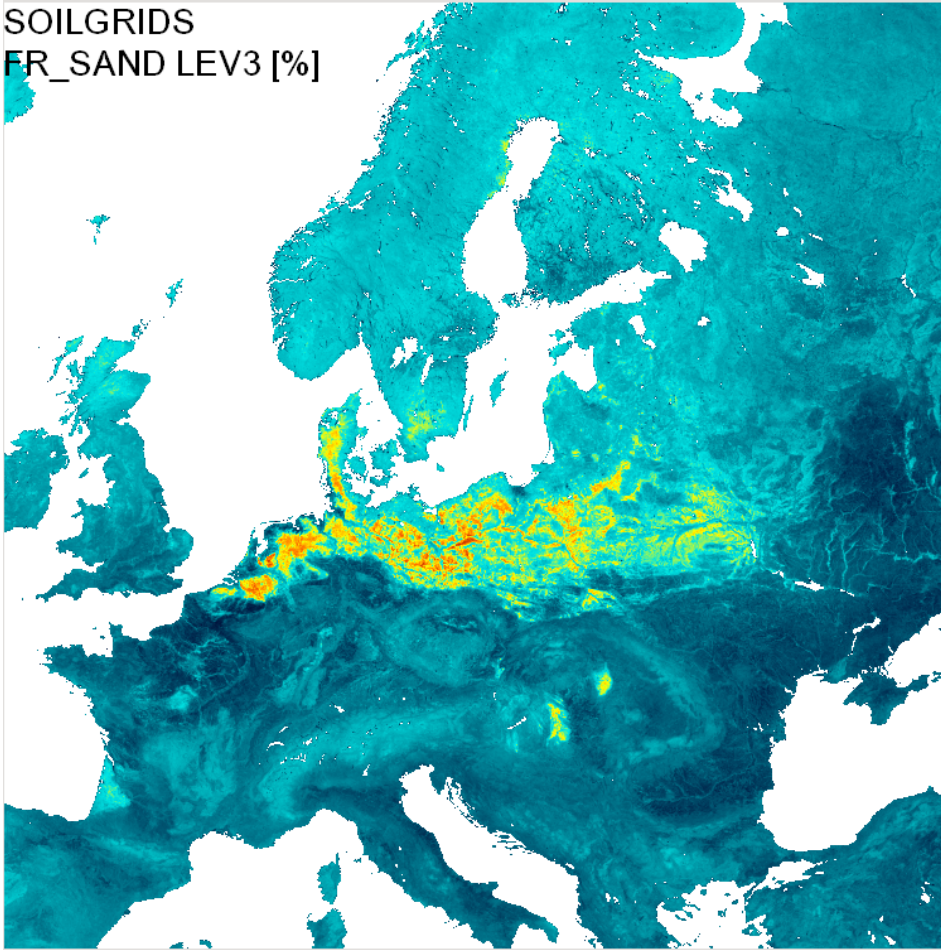
- **v5.0** (19.11.2018)
 - First unified release merging COSMO 4.0 and DWD 2.10 developments
 - Fully ICON capable
 - With full regression suite (at CSCS & MPI-H)
- **v5.1.1** (21.06.2019) is the most recent production release
 - Many bugs fixes
 - New skin conductivity parameter (SKC), derived from land use
- **Release notes** on <https://github.com/C2SM-RCM/extpar/blob/master/ReleaseNotes.md>
- **Planning** on <https://github.com/C2SM-RCM/extpar/issues>
- Updated **user manual**
(see tables 1 & 2 for used raw data sets and generated fields,
<http://www.cosmo-model.org/content/support/software/ethz/extpar-userManual-v5.0-a.pdf>)

EXTPAR

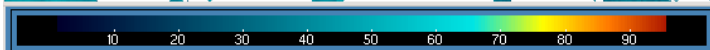
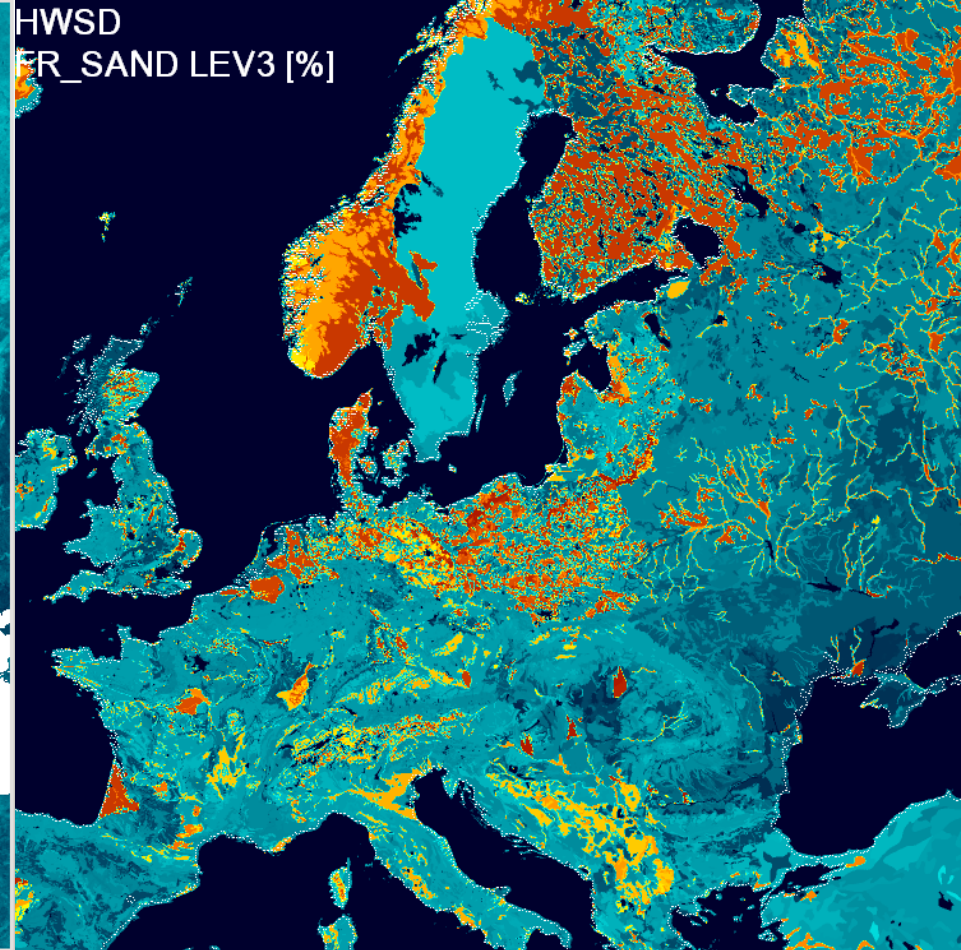
Miscellaneous

- **Only NetCDF output**
(Due to limited resources, focus on NetCDF as native format for both input and output.
If needed, generation of GRIB fields using external software)
- **On-line** generation of external parameters possible through **WebPEP**
(https://tools.clm-community.eu/web_pep/docs/readme.html, based on v5.1.1)
- New external parameters for **urban model** will be prepared in the frame of AEVUS 2
(if PT accepted by StC)
- Investigate the usage of ESA-CCI LandCover (**land use**), soilgrids (**soil type**),
CAMEL **emissivity**, Tandem-X DEM data (**high resolution topography**)

SOILGRIDS
FR_SAND LEV3 [%]



HWSD
FR_SAND LEV3 [%]



Data set choice is crucial!



climate change initiative

European Space Agency

ESA | CCI | aerosol | cloud | cmug | fire | ghg | glaciers | ice sheets | land cover | ocean colour | ozone | sea ice | sea level | sst | soil moisture

Land cover



Navigation

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Consortium



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Land cover maps

Submitted by Anonymous on Wed, 2014-10-01 15:58

Three global LC maps for the 2000, 2005 and 2010 epochs

The CCI-LC team has successfully produced and released its 3-epoch series of global land cover maps at 300m spatial resolution, where each epoch covers a 5-year period (2008-2012, 2003-2007, 1998-2002). These maps were produced using a multi-year and multi-sensor strategy in order to make use of all suitable data and maximize product consistency. The entire 2003-2012 MERIS Full and Reduced Resolution (FR and RR) archive was used as input to generate a 10-year 2003-2012 global land cover map. This 10-year product has then served as a baseline to derive the 2010, 2005 and 2000 maps using back- and up-dating techniques with MERIS and SPOT-Vegetation time series specific to each epoch.



In order to meet the user requirement set in this project, the map proposes a legend based on the UN Land Cover Classification System (LCCS) with the view to be as much as possible compatible with the GLC2000, GlobCover 2005 and 2009 products. The level of thematic details was found to be improved with respect to previous global LC products. Each map is characterized by a set of quality flags.

For more information on the products, go to: <http://maps.elie.ucl.ac.be/CCI/viewer>.

User login

Username: *

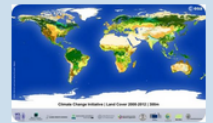
Password: *

Log in

[Request new password](#)

Search

Search this site:



External parameters change with time!



SNOWE

Status

- SNOWE is a complete software package to prepare the [snow water equivalent and snow density](#) fields required by the COSMO model.
 - *Innovative aspect is the use of observation driven 1d snow model at SYNOP sites to derive the full characteristics of the snow pack*
- Maintained and **further developed** by [RHM](#)
- Available on [COSMO web site](#), incl. documentation
 - *Latest release is version 2 (October 2017)*
 - ***Upgrade planned in October 2019***

SNOWE

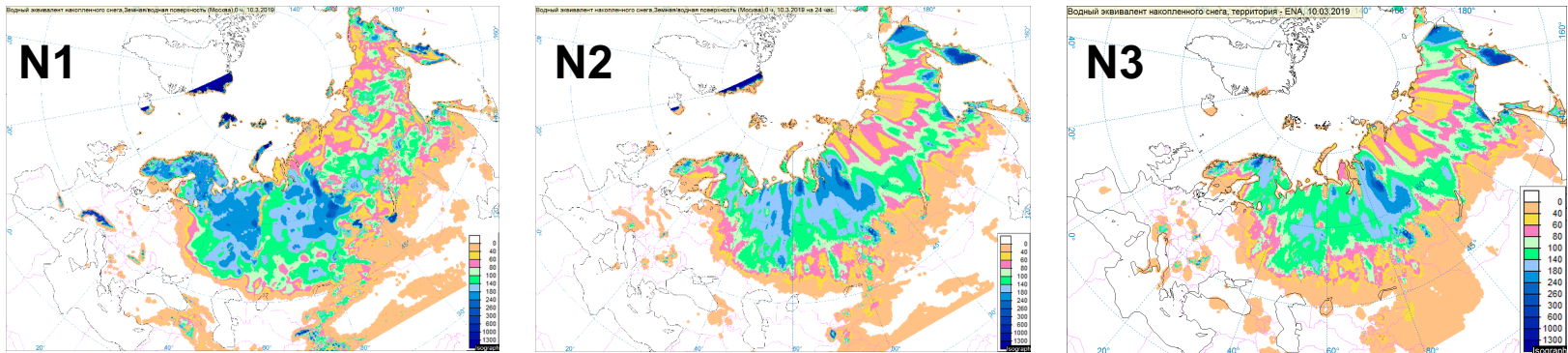
Status

Recent developments

- Improvement of *1d-snow model*
 - Add possibility to use *ICON first guess*
 - Comprehensive *validation* (full winter 2018-2019 on Eurasian continent, see next)
 - Work on-going to improve the *Optimal Analysis* scheme
-
- SNOWE based *data set* available for **all** European stations for 2018-2019 (on COSMO web site)
 - Possible *COSMO action* (PT / PP), will be discussed at next ICCARUS

SNOWE

An example



Snow Water Equivalent for 10/03/2019

First panel (N1) : *ICON SWE*

Second panel (N2) : *SNOWE using ICON first guess*

Third panel (N3) : *SNOWE using COSMO-Ru cycle*

- *N2 and N3 have close verification scores (river discharges), better than N1*
- *Note that complex topography aspects are (currently) not considered*

Fieldextra

Releases history



- **V12.7.0** (02.02.18), **v12.8.0** (17.12.18), **v13.0.0** (06.06.19), **v13.1.0** (09.19)
- Most recent production release is **v13.0.0**
 - Move main [GitHub repository](#) from MeteoSwiss-APN to **COSMO-ORG**
(*most up-to-date code, release notes, planning ...*)
 - Comprehensive [cookbook](#)
(*more than 60 fully **commented examples**, incl. input data and reference results*)
 - Robust and flexible [NetCDF CF import](#)
(*incl. compression, nc4 / nc3 / nc3 with 64bits offset*)
 - Replace GRIP API with [ecCodes](#)
(*v2.14.9b, incl. OpenMP performance fix*)
 - Externalize and update [icontools](#)
 - Extend [lateral re-gridding](#)
(*bi-linear, generalized distance, conditional, **barycentric for ICON***)
 - And **much more...**
see <https://github.com/COSMO-ORG/fieldextra/wiki/blob/master/History.md>

Fieldextra

Planning



→ 03.2020

- Improve general **performances**
- **Asynchronous** read (MPI implementation)
- Consolidate **regression suite** & steps towards **continuous integration** (CI)

→ 09.2020 *(plan subject to changes)*

- Full **ICON** support
(currently field on native grid must first be interpolated on regular grid)
- In addition, **new features according to users needs and priorities**
- WorldBank & DWD action to propose **(ICON-LAM + fieldextra + Ninjo) in the cloud**

Fieldextra

Some use cases



- **Upscale** full KENDA 1.1km analysis to a co-located 2.2km grid *[pre-processing, MCH]*
- Generate COSMO-1E **products** *[MCH]*
(0.8 TB input data, about 2000 products, within 40')
- Generate COSMO-LEPS **products** *[ARPA-SIMC]*
- Compute **tropopause height in ISA pressure** for ICON global *[DWD]*
- **Translate** EXTPAR NetCDF output to GRIB 2, for COSMO model *[ITAF]*
(`fxconvert -N extpar nc in_file`)

TERRA standalone (TSA)

Additional software

- Tool supporting **model development** and scientific studies, also used to **spin-up the soil**, after change of model configuration, or for model calibration
- Maintained by **IMS** in best effort mode
- Version based on **COSMO 5.03** is available
- Expect new release synchronized with **COSMO 6.0**

➤ *Recommendation to **integrate** this functionality in **ICON** model framework*