# Recent developments of the COSMO-CLM system

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Climate Limited-area Modelling Community

# INT2LM

# Recent Official Version

- Last year's assembly
  - int2lm_180226_2.05_clm2

- Today
  - int2lm_2.07
    - Corrections for HadGEM input and itype_profiles_vert_interp=2
    - Modifications for MESSy
    - Implemented a technical testsuite for INT2LM

- In the pipeline
  - int2lm_2.08
    - Input of W_SNOW, T_SNOW is optional for climate runs
    - Several technical fixes for Kinne aerosol climatology

# COSMO-CLM

# Recent Official Version

- Last year’s assembly
  - COSMO_131108_5.00_clm16

- Today
  - COSMO_131108_5.00_clm16

i.e. no change in version since the last CLM-Assembly

BUT: Documentation regarding COSMO 5.0 has now DOIs and is online
https://www.dwd.de/EN/ourservices/cosmo_documentation/cosmo_documentation.html

# COSMO-CLM 6

# What about COSMO 6?

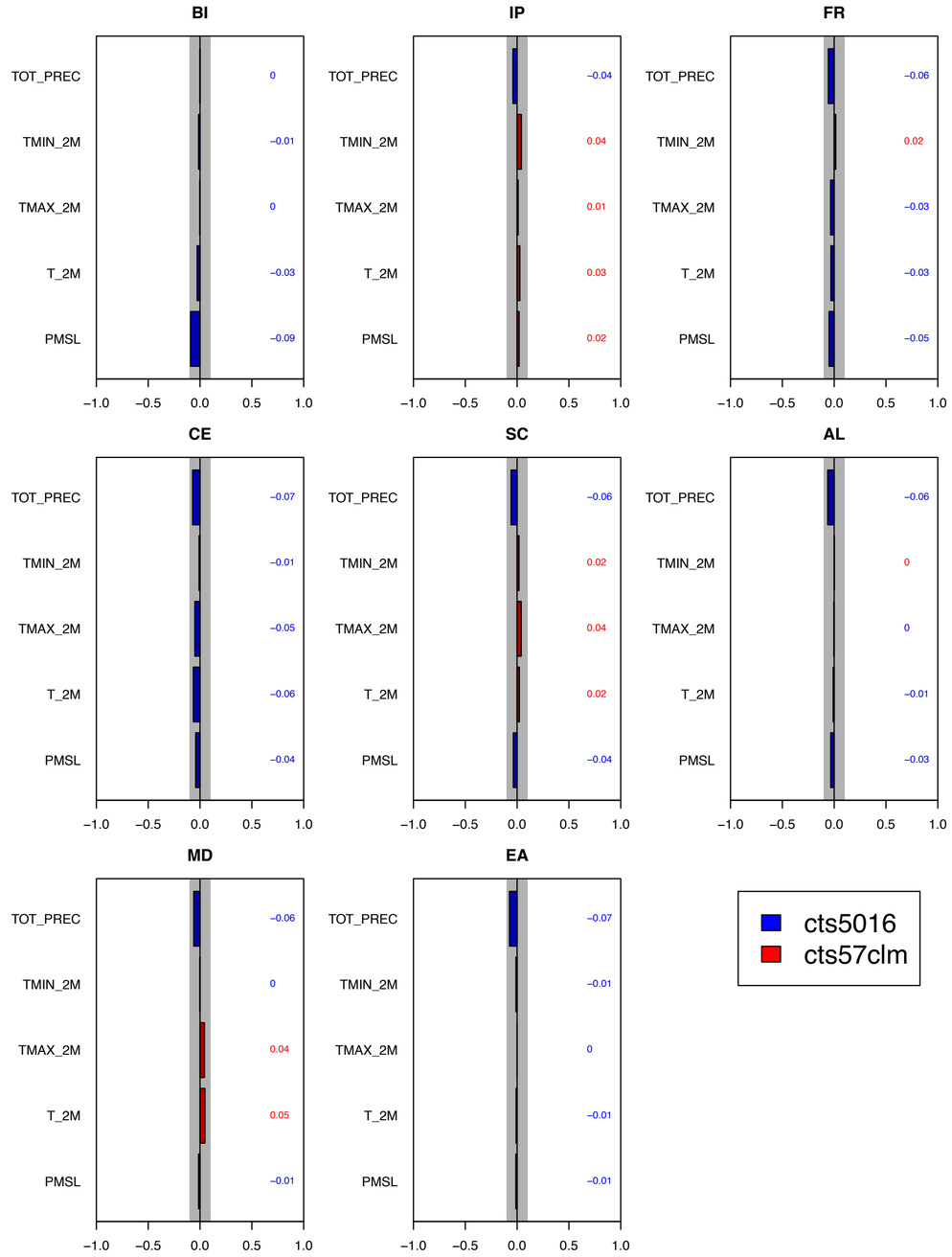
- Nearly finished, but definite date not fixed.
- Technical details see Daniel Rieger's presentation.

- CLM-Community modifications merged with latest COSMO dev master into branch "test_all_clm". This branch was tested in a 5 years (1980-1984) climate test simulation against COSMO5.0-CLM16 and EOBS13.1 on 0.44 grid over Europe. (no namelist optimisation -> that's the task of COPAT2)
  - test_all_clm contains:
    1. changes made up to CLM16 ("read the README_Changes" in COSMO5.0 including new quantities for diagnostic wind statistics (e.g. wind directions, i.e. wind rose, statistics), restart files in netCDF format)
    2. New hydrology scheme by Linda Schlemmer
       - this option produced a model crash, because of division by zero. Bug fix was implemented yesterday.

# COSMO5.0-CLM16
# COSMO Dev Branch
# test_all_clm

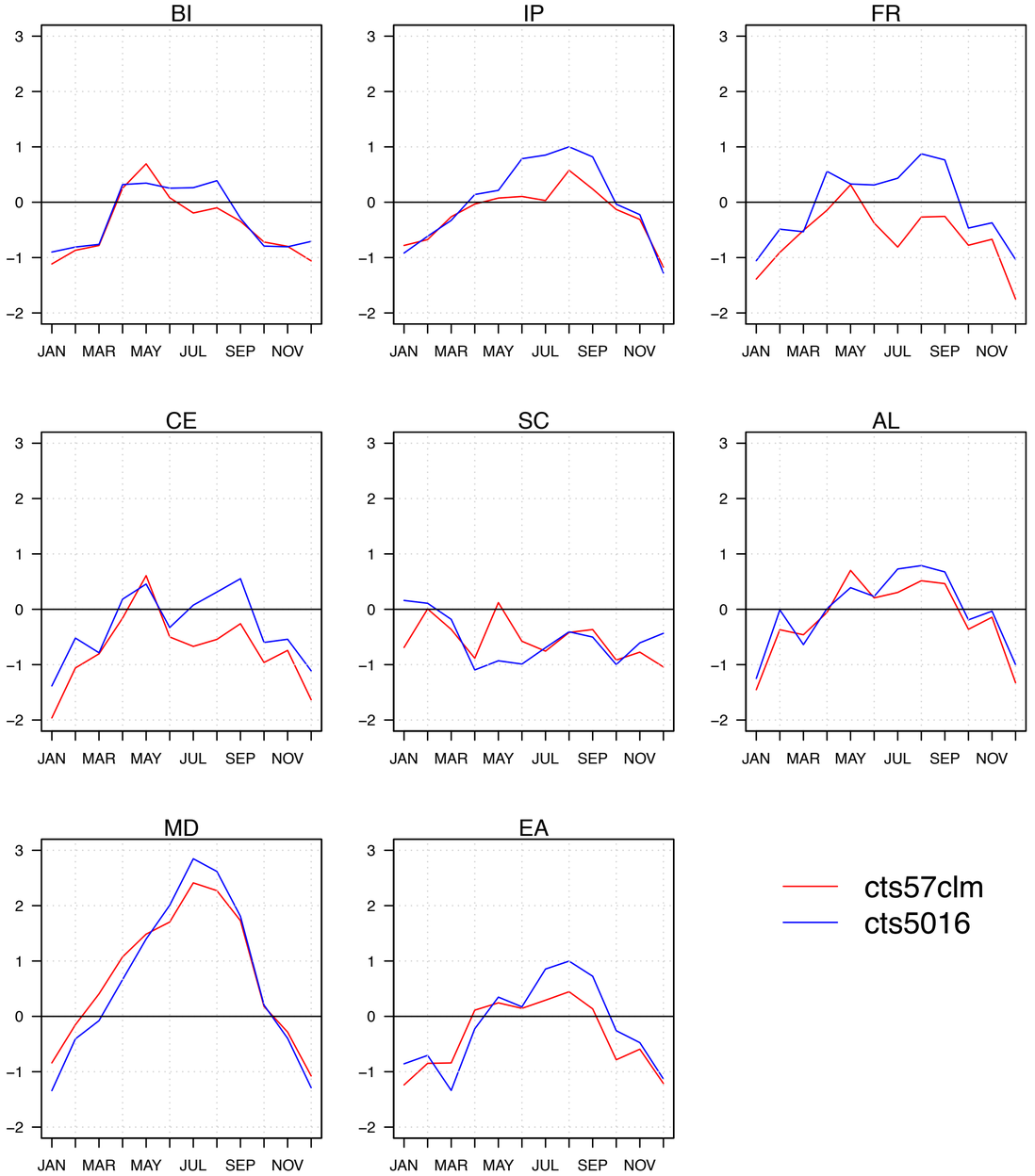
# Added Value Skill Score

cts57clm and cts5016 with EOBS



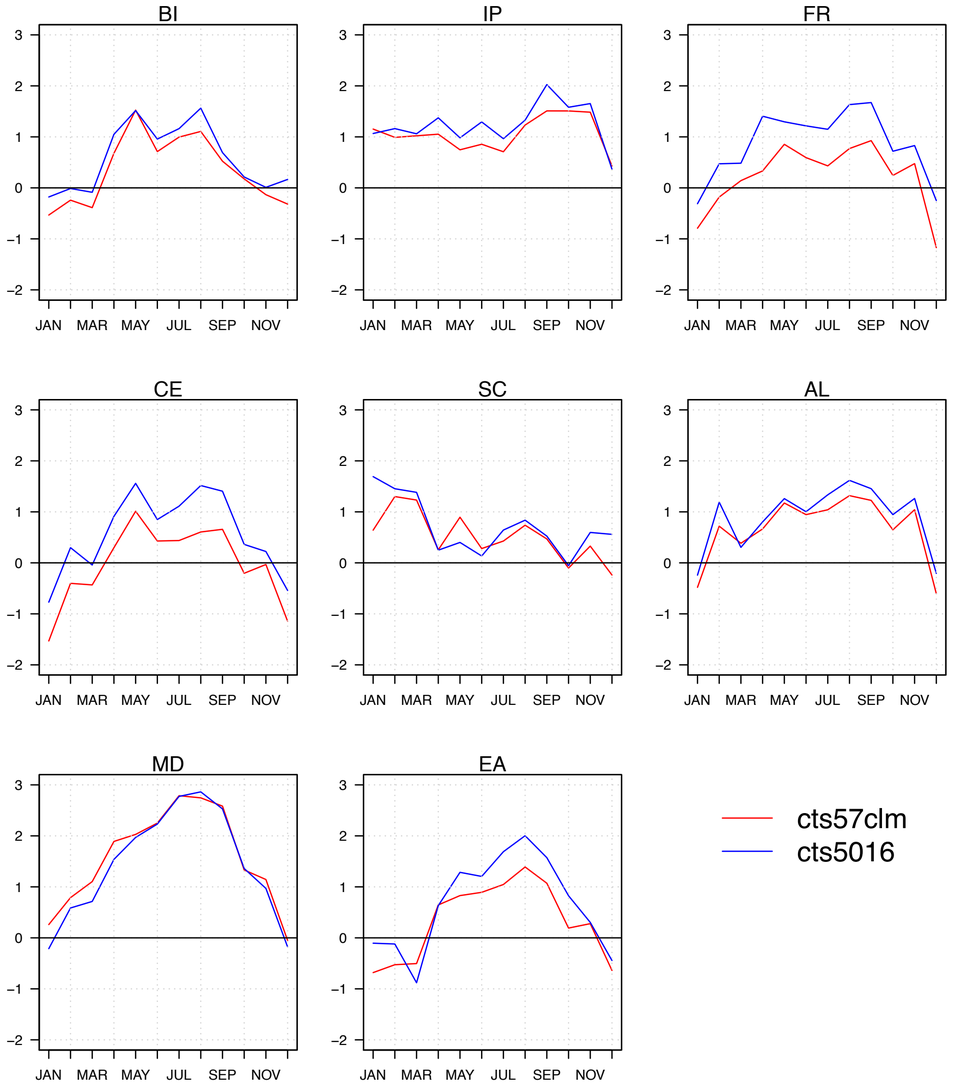
# BIAS CCLM – EOBS (T_2M)

Difference in [K]



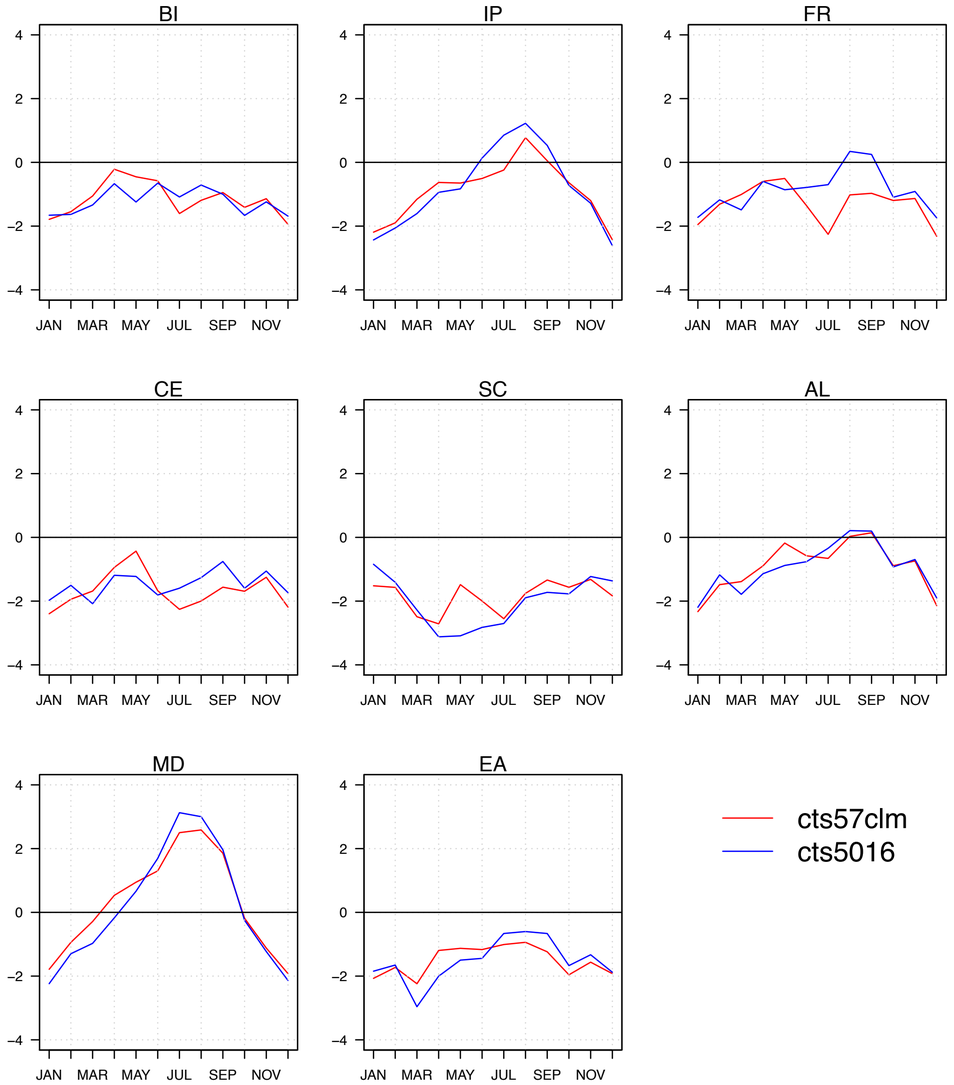
# BIAS CCLM – EOBS (TMIN_2M)

Difference in [K]



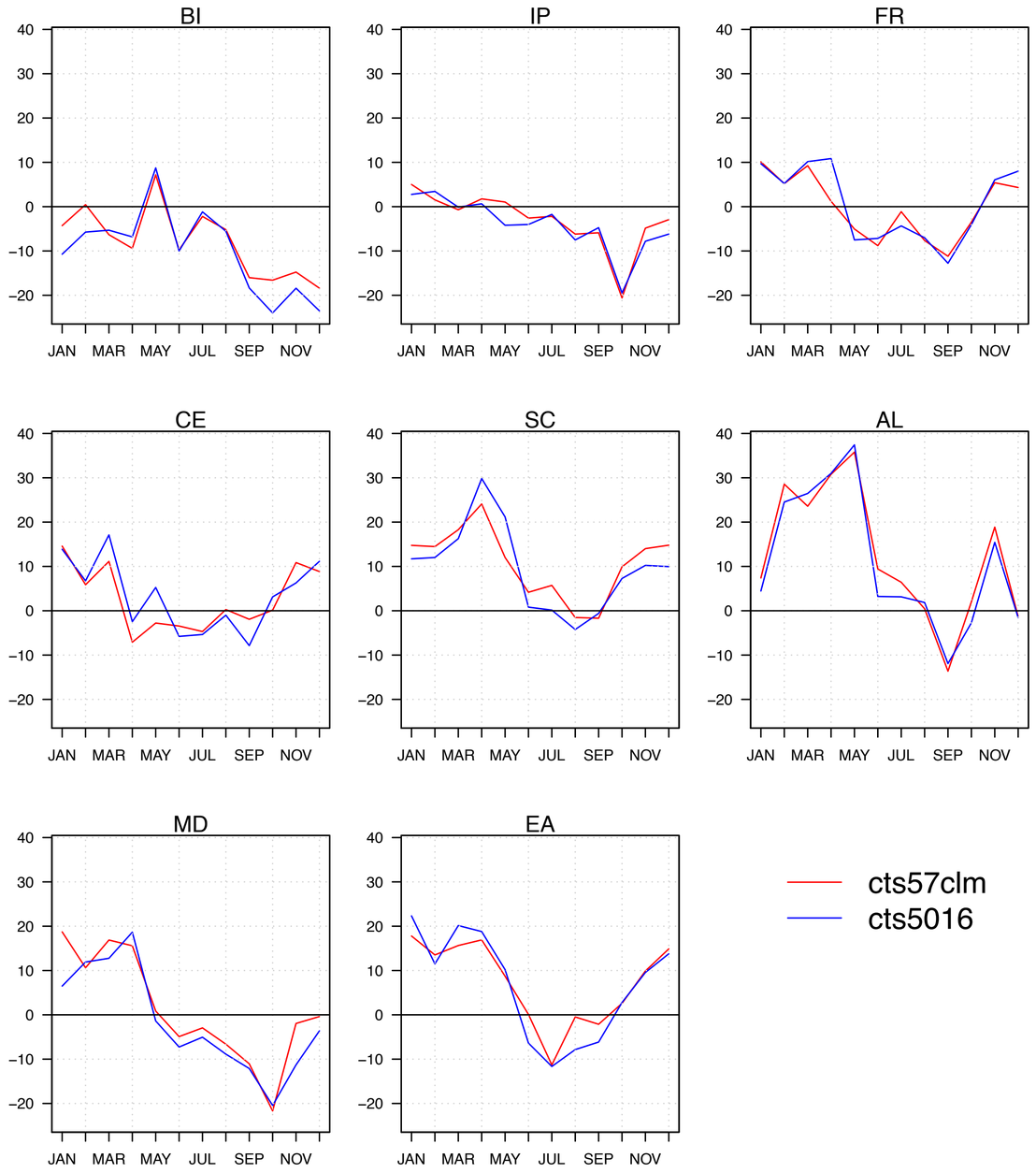

# BIAS CCLM – EOBS (TMAX_2M)

Difference in [K]



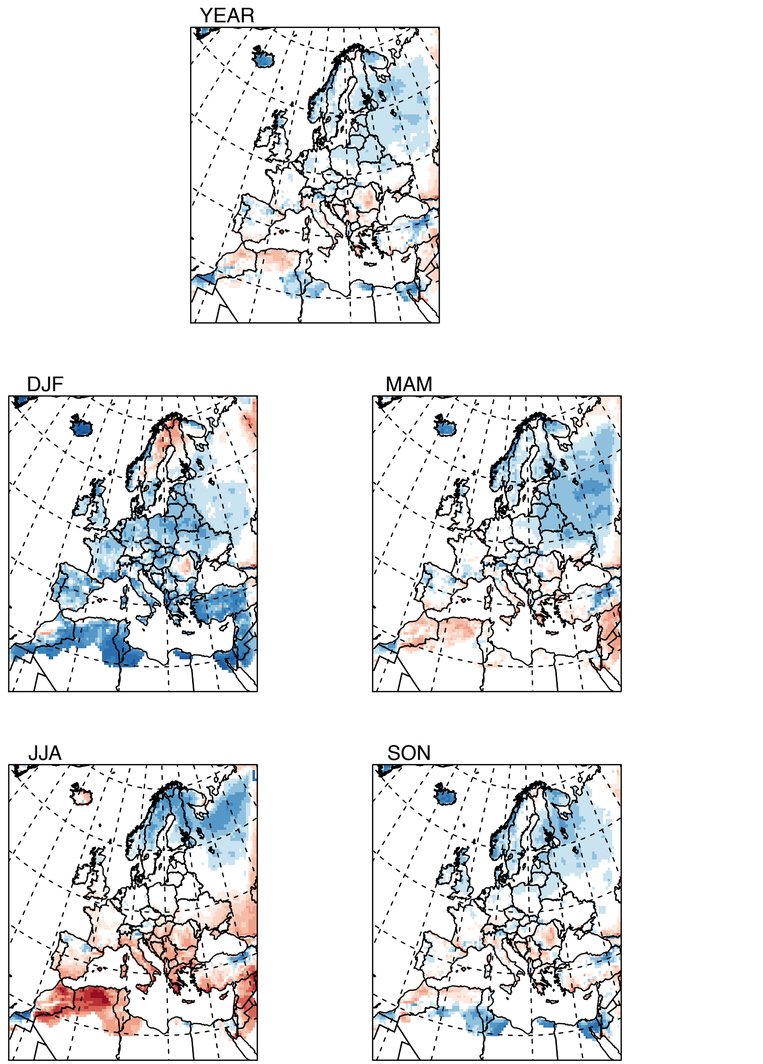
# BIAS CCLM – EOBS (TOT_PREC)

Difference in [kg m−2]

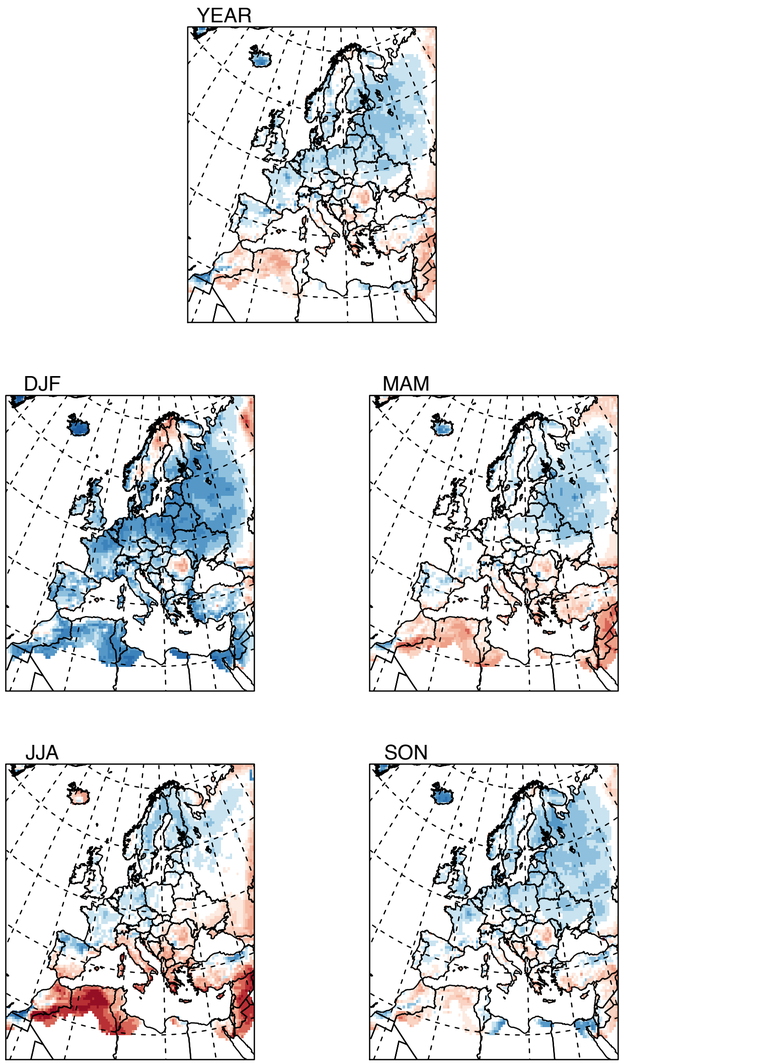


# 2m Temperature

cts5016 – EOBS

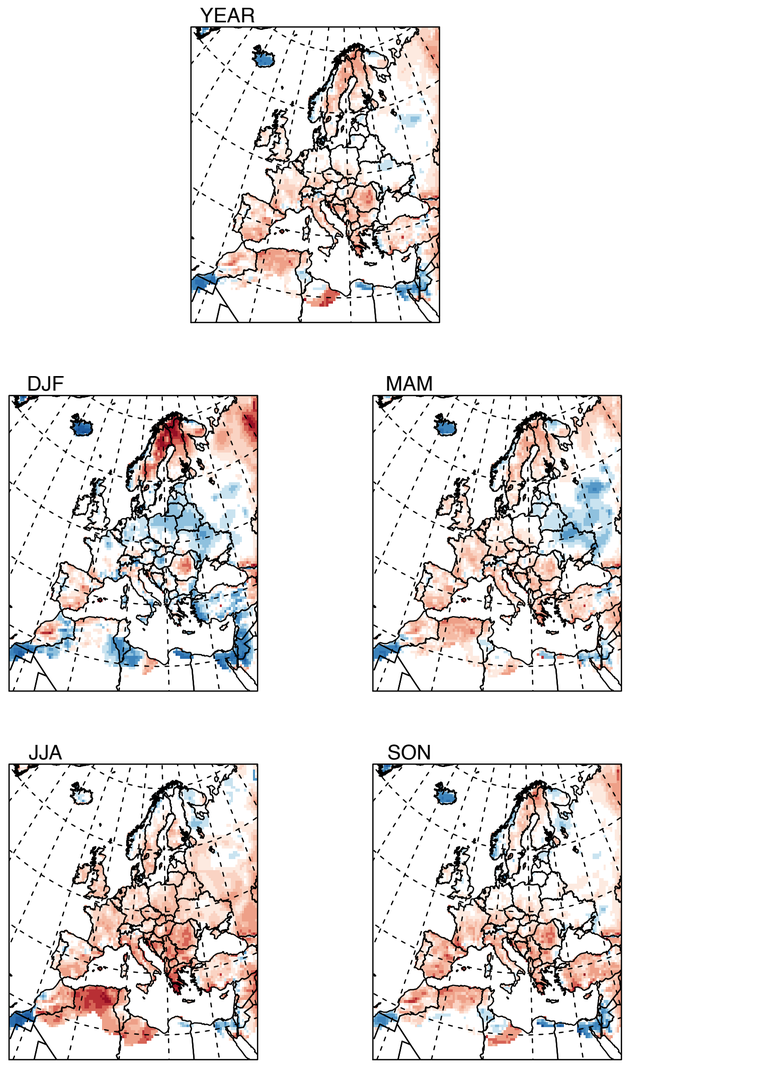



cts57clm – EOBS

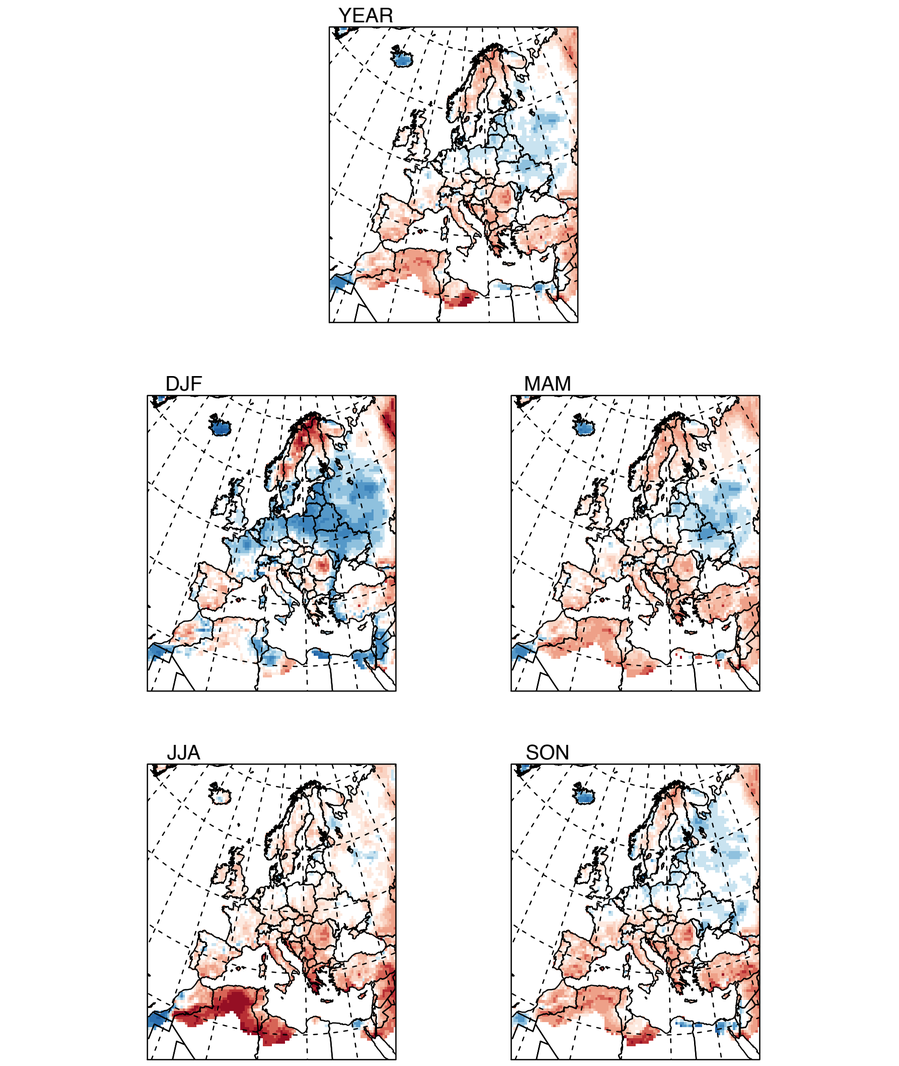



# 2m Min. Temperature

cts5016 – EOBS

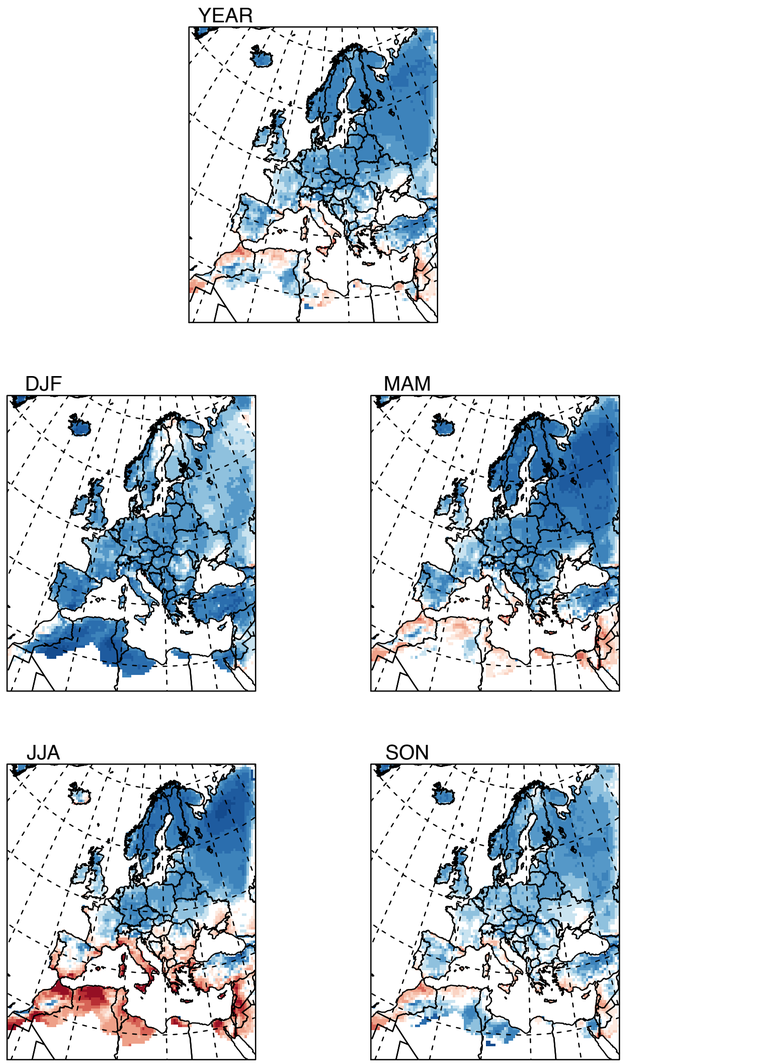



cts57clm – EOBS

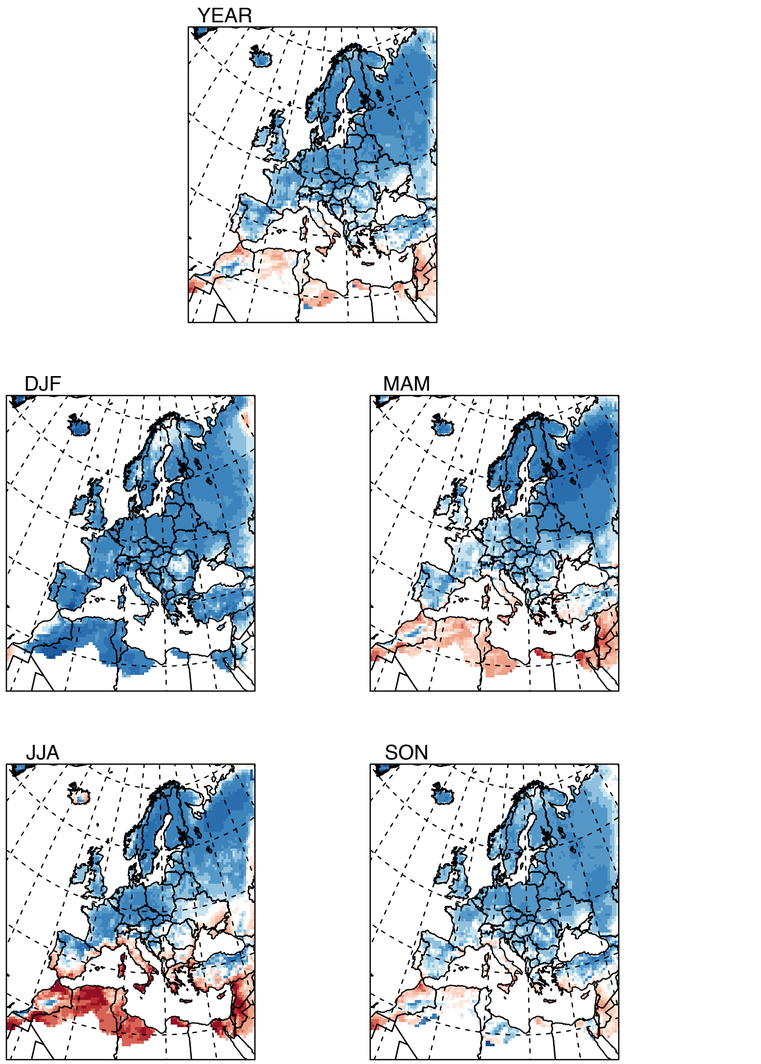


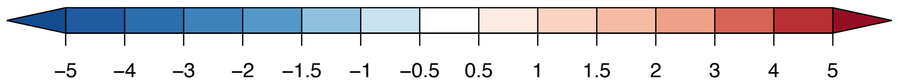
# 2m Max. Temperature

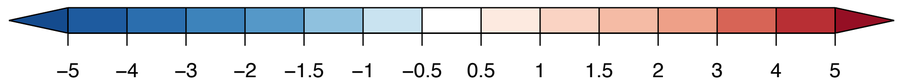
cts5016 – EOBS




cts57clm – EOBS

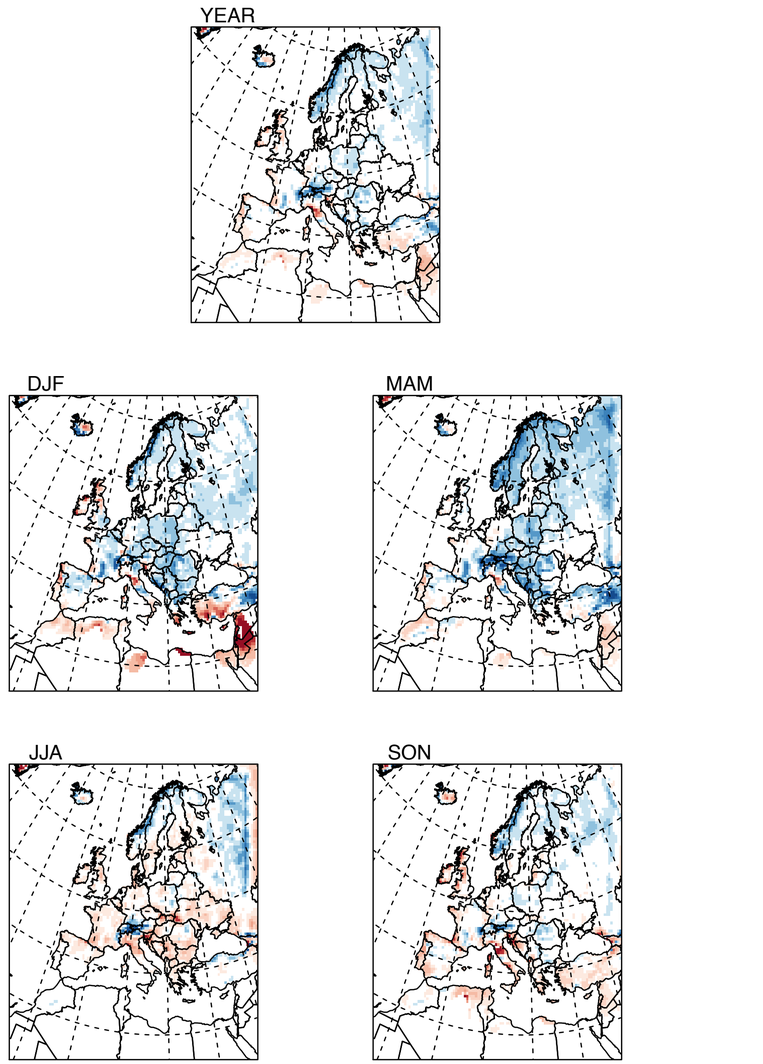


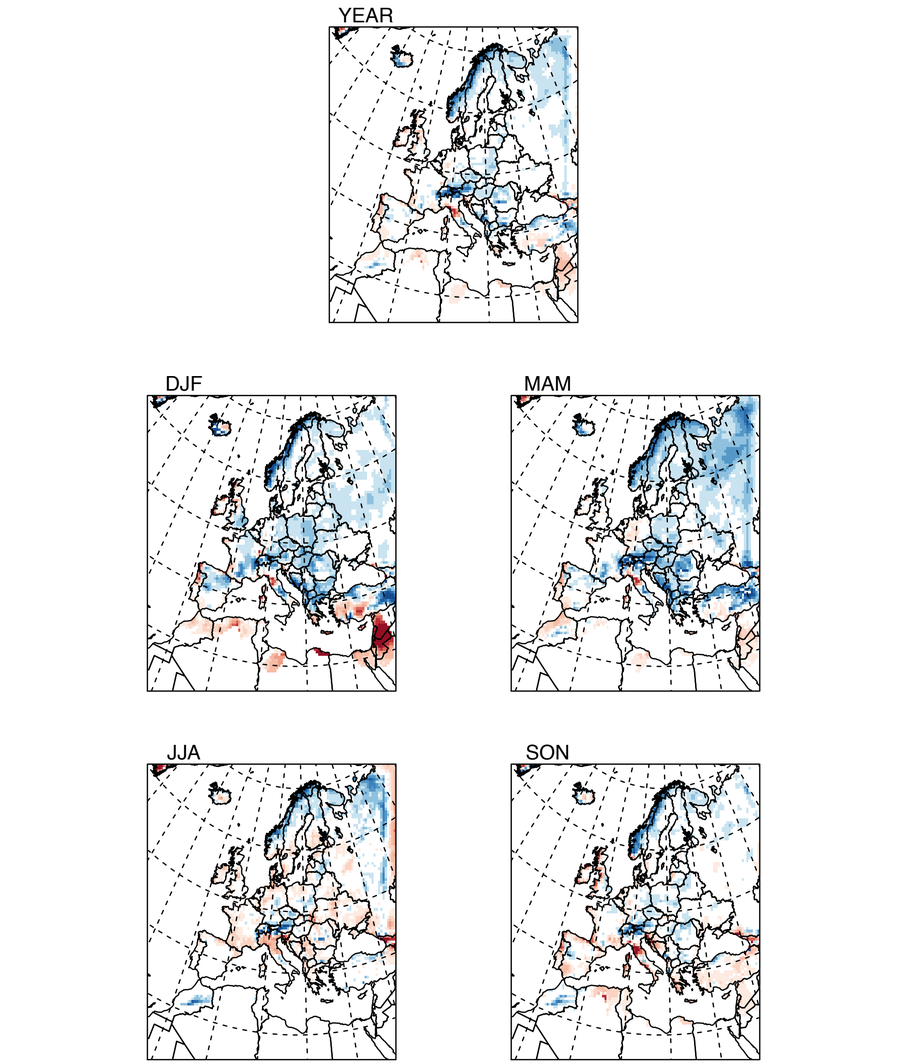



# Total Precipitation

cts5016 – EOBS




cts57clm – EOBS



# Starter Package

# Changes Starter Package

- Last year's assembly
  - Version 3.1.1

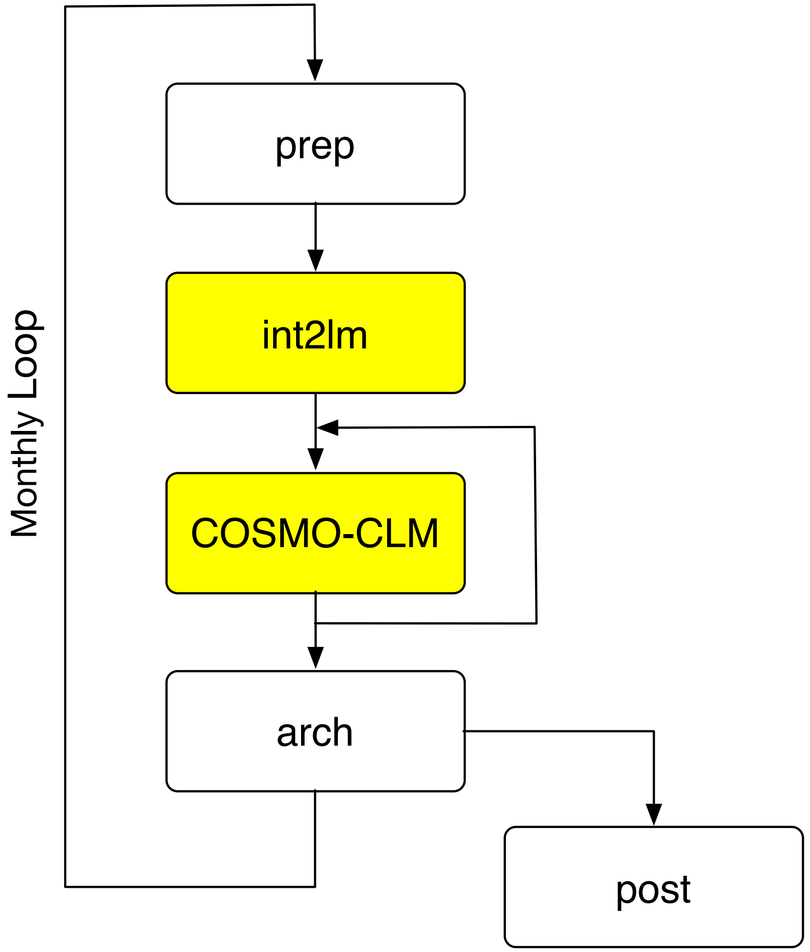
- Today
  - Version 3.1.1

There are several small modifications in the next version and a major one:
- parallelization of pre-processing, archiving and post-processing (thanks a lot to Klaus Keuler for implementation)

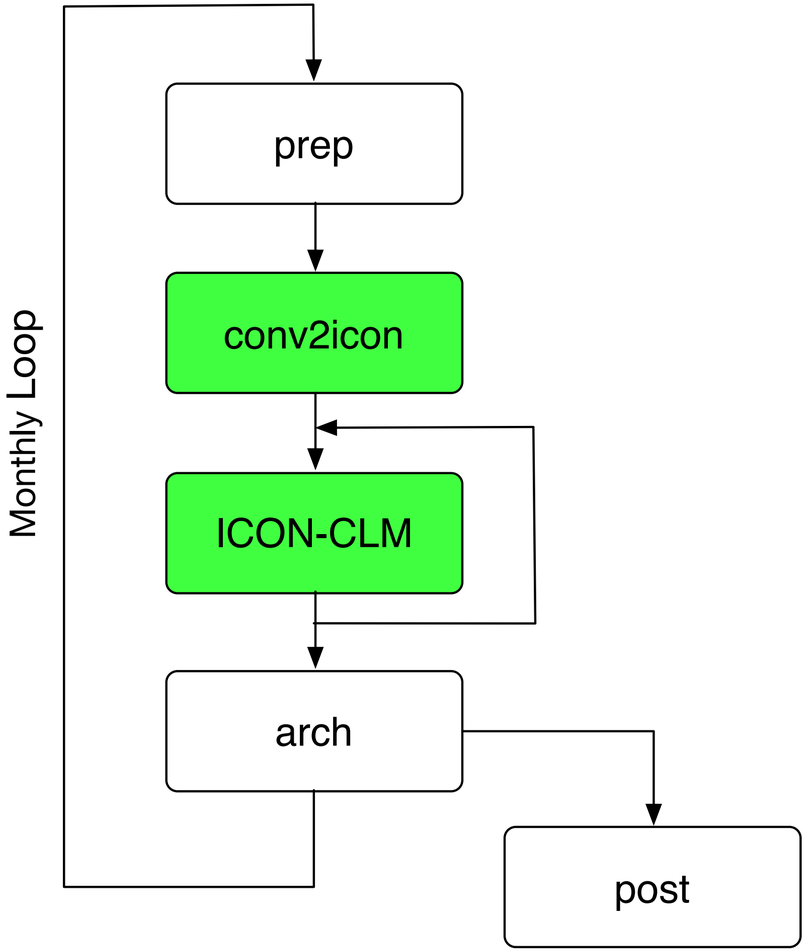
This is planned to be distributed with COSMO-CLM Version 6

# Future of the Starter Package

## Starter Package for COSMO-CLM




## Starter Package for ICON-CLM Experiments (SPICE)



# Thank You!