NorCPM-CF – A NorCPM setup for Climate Futures

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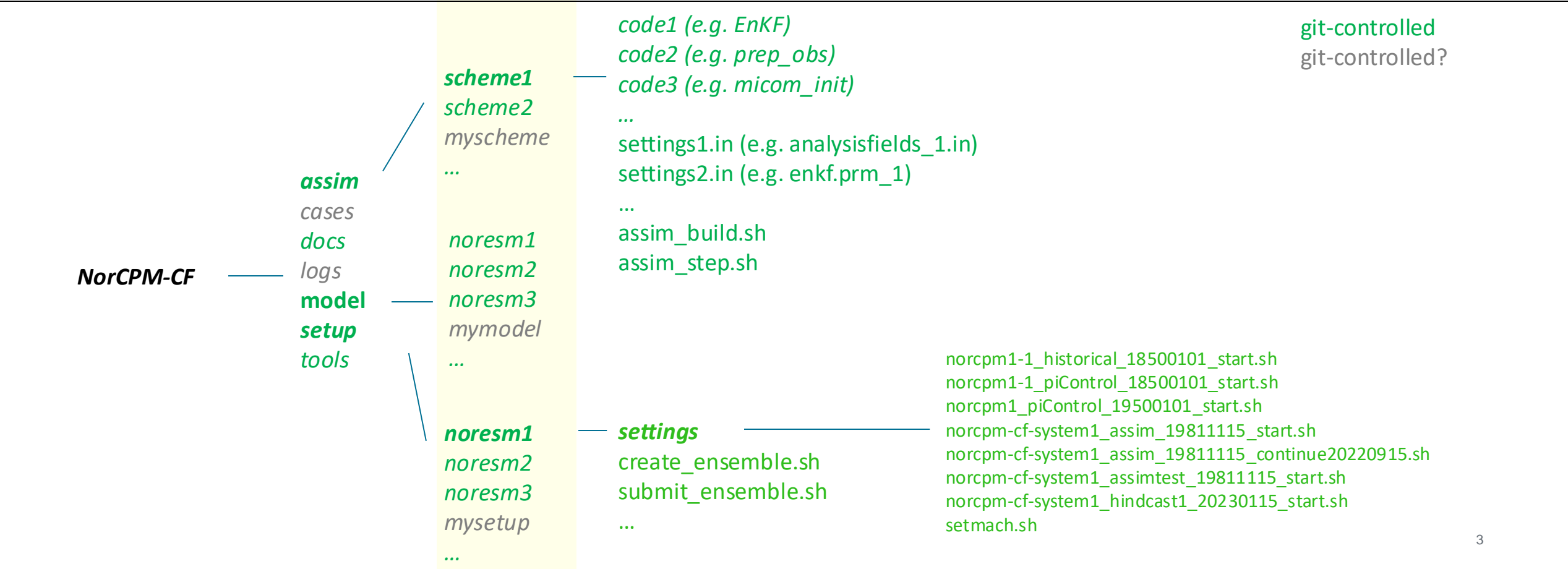[4]INSTITUTE OF MARINE RESEARCH

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Features

➢NorCPM (NorESM+assimilation) code, scripts and settings in single git-repository
https://github.com/BjerknesCPU/NorCPM-CF

➢NorCPM (NorESM+assimilation) input data in single location on Betzy
/cluster/shared/noresm/inputdata

➢Full experiment customization via setting files and command line options (allows better git-version control because scripts remain more "static")

➢Code compilation for each experiment (ensures consistency, traceability, portability)

➢Flexibility to add mulitple models and assimilation schemes in a structured and organized manner

➢Rigerous logging of building and running the system (traceability, reproducability)

➢Documentation: user-guide with examples for running NorCPM

https://github.com/BjerknesCPU/NorCPM-CF

NorCPM-CF

- allows **multiple *assimilation schemes* and *experiment setup environments*** – multiple users can contribute to the same repository without interfering with each other's work
- flexible; structured and organized; fully version controlled
- suitable for use with NorESM1, NorESM2 and later versions

code1 (e.g. EnKF)
code2 (e.g. prep_obs)
code3 (e.g. micom_init)
...
settings1.in (e.g. analysisfields_1.in)
settings2.in (e.g. enkf.prm_1)
...
assim_build.sh
assim_step.sh

git-controlled
git-controlled?

scheme1
scheme2
myscheme
...

assim
cases
docs
logs
model
setup
tools

NorCPM-CF

noresm1
noresm2
noresm3
mymodel
...

noresm1
noresm2
noresm3
mysetup
...

settings
create_ensemble.sh
submit_ensemble.sh
...

norcpm1-1_historical_18500101_start.sh
norcpm1-1_piControl_18500101_start.sh
norcpm1_piControl_19500101_start.sh
norcpm-cf-system1_assim_19811115_start.sh
norcpm-cf-system1_assim_19811115_continue20220915.sh
norcpm-cf-system1_assimtest_19811115_start.sh
norcpm-cf-system1_hindcast1_20230115_start.sh
setmach.sh

Tutorial for performing an assimilation experiment using NorESM1-ME

Install NorCPM-CF in the nn9039k project space

  mkdir -p /cluster/projects/nn9039k/people/$USER

  cd /cluster/projects/nn9039k/people/$USER

  git clone ssh://git@github.com/BjerknesCPU/NorCPM-CF.git NorCPM-CF

Set up a NorESM1-ME assimilation test experiment with 4 members

  cd /cluster/projects/nn9039k/people/$USER/NorCPM-CF/setup/noresm1

  ./create_ensemble.sh settings/norcpm-cf-system1_assimtest_19811115.sh

Submit experiment

  ./submit_ensemble.sh settings/norcpm-cf-system1_assimtest_19811115.sh

Tutorial for performing an assimilation experiment using NorESM2-LM

Install NorCPM-CF in the nn9039k project space

mkdir -p /cluster/projects/nn9039k/people/$USER

cd /cluster/projects/nn9039k/people/$USER

git clone ssh://git@github.com/BjerknesCPU/NorCPM-CF.git NorCPM-CF

Install NorESM2

cd /cluster/projects/nn9039k/people/$USER/NorCPMX/setup/noresm2

./install_noresm2.sh

Set up a NorESM2-LM assimilation test experiment with 10 members

./create_ensemble.sh settings/noresm2-lm_odaday_19960101.sh

Submit experiment

./submit_ensemble.sh settings/noresm2-lm_odaday_19960101.sh