ISIMIP Forest Sector / PROCLIAS TG 2.5

- ISIMIP Forest sector overview (2a/b data, 1*1km experiment, country scale simulations) (C. Reyer)

- *"Towards a bottom-up assessment of the climate sensitivity of Europe's forests"* (Marc Gruenig, Werner Rammer)

- *"Drought-Mortality MIP from RESONATE"* (Katarina Merganicova)

- *"Assessing the impact of drought and heatwaves on European forest tree mortality and productivity for the last two decades extreme events"* (Tarunsinh Chaudhari)

- *"Application of the process based model 3D-CMCC-FEM to simulate the productivity at regional scale in Basilicata (Italy)"* (Daniela Dalmonech)

# TG2.5 Country-scale modelling of climate impacts on EU forests

Objectives:

- **compile and exchange data** for country-scale forest modeling

- **Coordinate and conduct country-level model simulations** in European forest within ISIMIP3a/b for impact attribution and future scenario analysis

- **Analyses of ISIMIP2b forest simulations** (from previous COST Action PROFOUND)
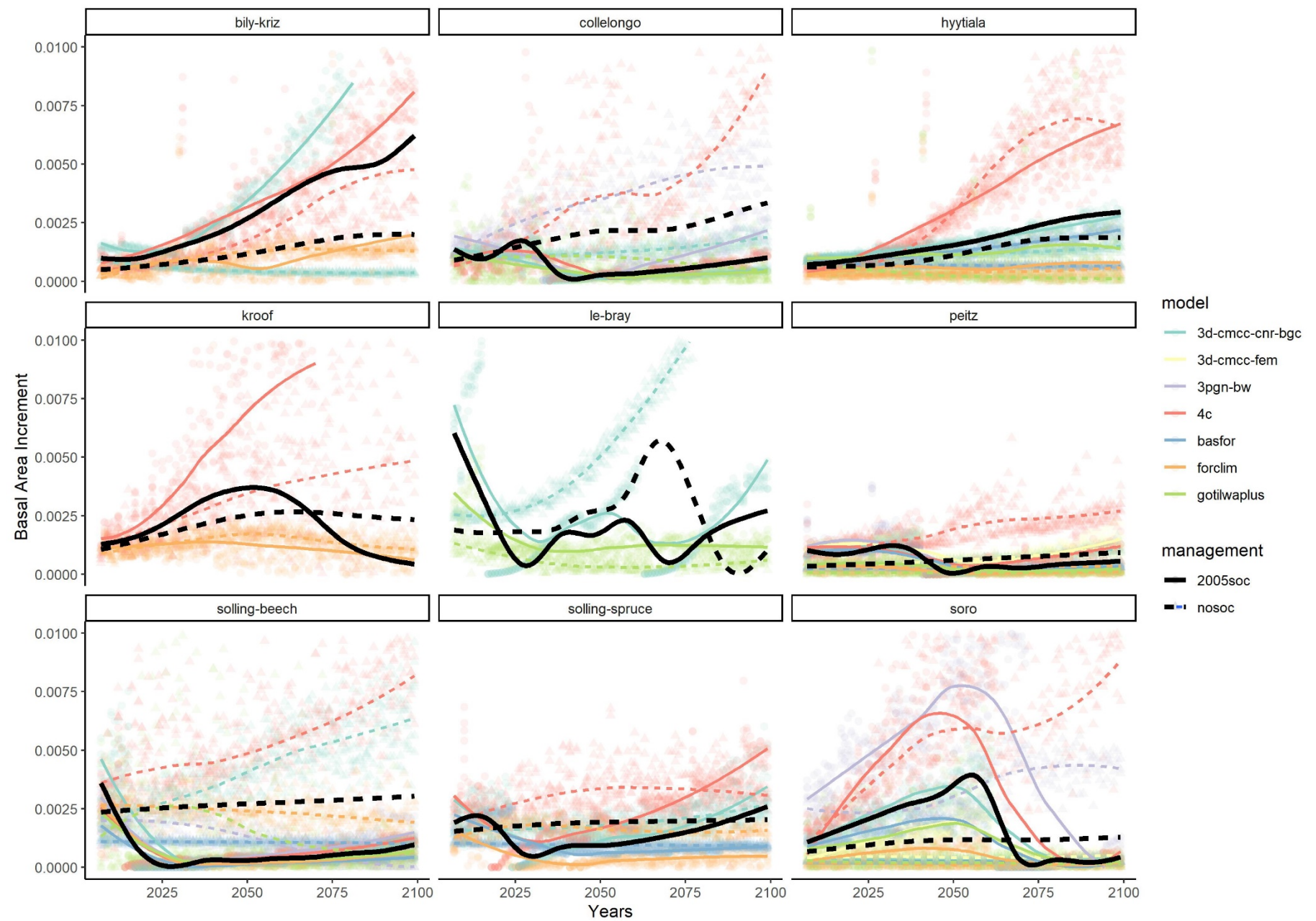
TG leaders: Mats Mahnken, Christopher Reyer

TG contributors: Alessio Collalti, David Cameron, Denis Loustau, Santi Sabate, Daniel Nadal-Sala, Friedrich Bohn, Katarina Merganicova, Jan Merganic, Manfred J. Lexer, Annikki Mäkelä, Mikko Peltoniemi, Francesco Minunno, Anja Rammig, +YOU...
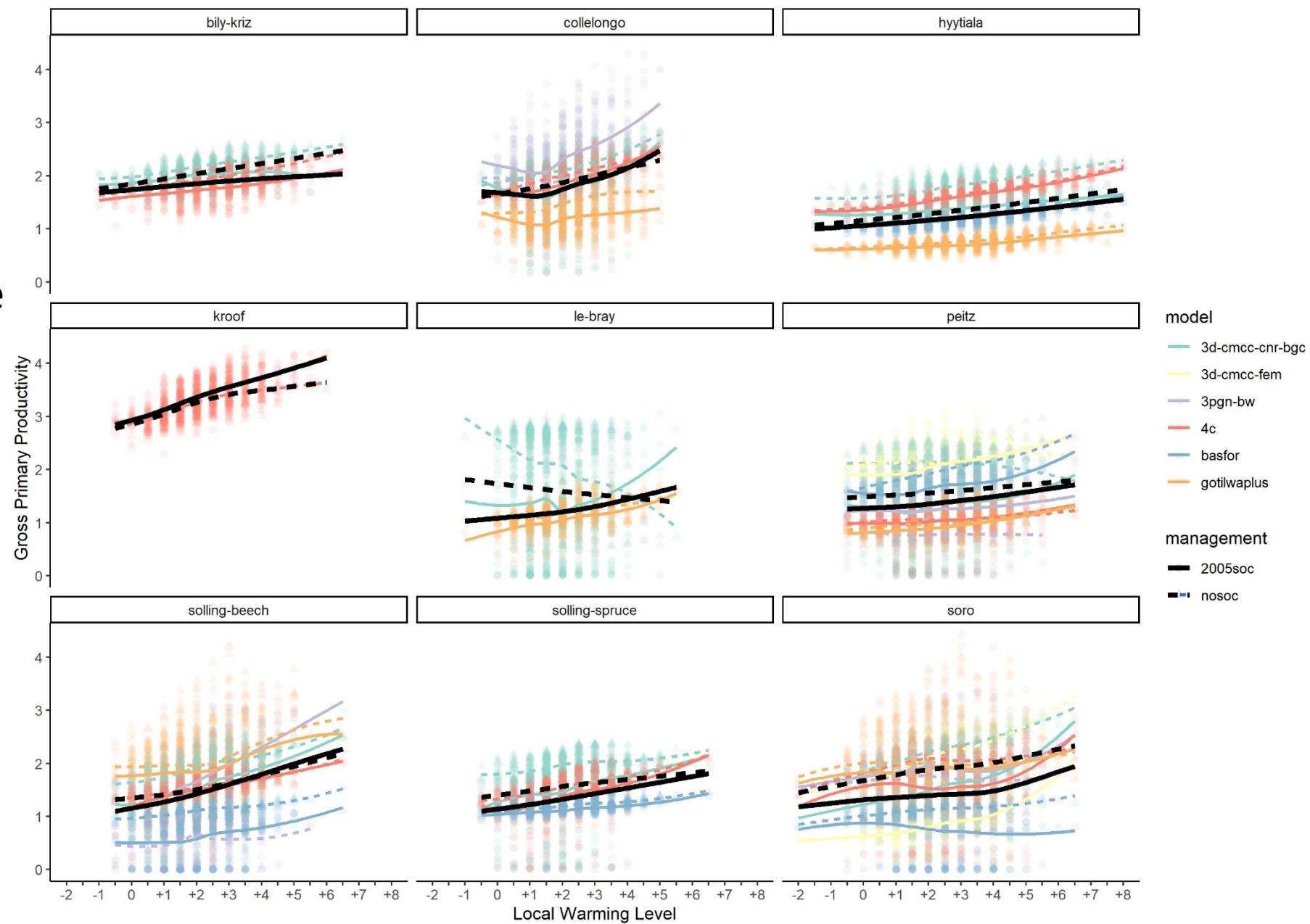
ISIMIP2b data

Thanks to Riccardo Testolin!

ISIMIP2b data

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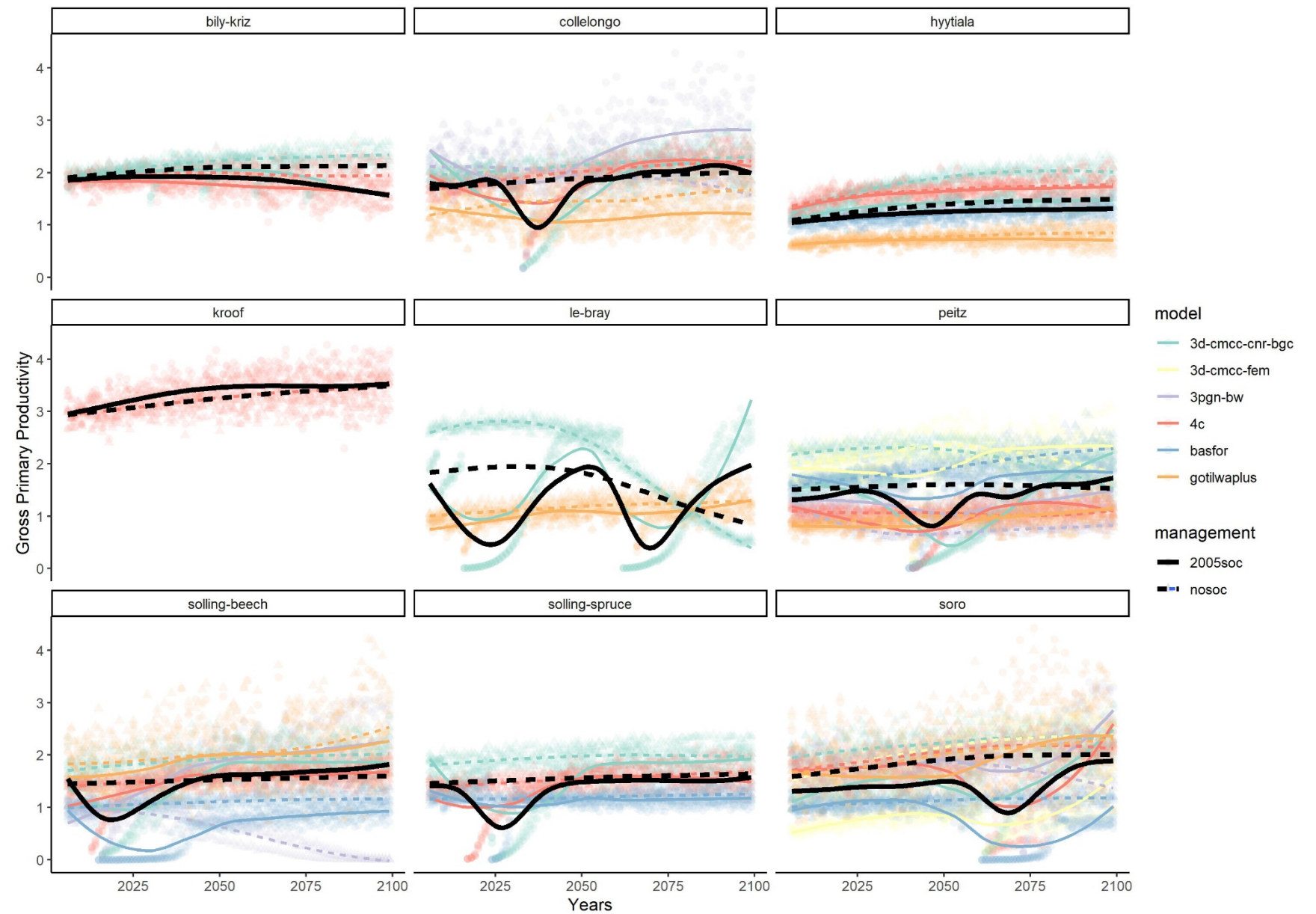
ISIMIP2b data

- Ideas for analyses
  - Emergence of climate impact across historical variability?

Thanks to Riccardo Testolin!

High-resolution sensitivity experiments

Historical high-resolution climate dataset is now available:

- Name: CHELSA-W5E5 v1.0 (W5E5 v1.0 downscaled with CHELSA v2.0)
- Details: https://doi.org/10.48364/ISIMIP.836809.2
- Temporal resolution and coverage: daily, 1979-2016
- Spatial resolutions: 0.5' (~1 km), 1.5' (~3 km), 5' (~10 km), 30' = 0.5° (~60 km)
- Variables: pr, rsds, tas, tasmin, tasmax
- Added value relative to W5E5: expected particularly over mountainous terrain

Goals of experiments:

- Assess added value of impact simulations thanks to higher-resolution climate inputs
- Inform decision about spatial resolution of climate inputs in next phase of ISIMIP

Interested?

- Get in touch with Christopher Reyer (reyer@pik-potsdam.de) or Stefan Lange (slange@pik-potsdam.de) to discuss the inclusion of this experiment in the ISIMIP3a protocol of your sector
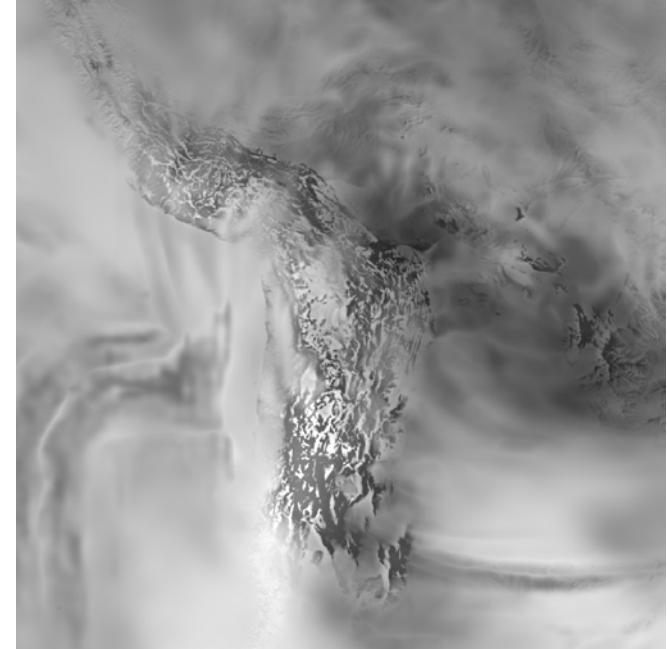
Forest sector contribution to high-res experiment

- https://docs.google.com/spreadsheets/d/1PK7EUHukz0F8Bfnm_Ggg8HmMrENU-KSJgymIa3xuO8k/edit?usp=sharing
- Use Collelongo and maybe other sites from PROFOUND DB (where topography matters)?
- What data to compare to? Flux data but also other structural data?

Country-scale applications

Model Table

https://docs.google.com/spreadsheets/d/186ass6P2n0qFrCk5Td9bnIJth9hCZrJ6_PASrN6tDn8/edit?usp=sharing

Model	Researcher Names		Model	Researcher Names
3D-CMCC-FEM	Alessio Collalti & Team		iLand	Rupert Seidl
3PG	Volodymyr Trotsiuk		Landscape-DNDC	Rüdiger Grote
3PGN-BW	Rasoul Yousefpour, Andrey Lessa Derci Augustynczik		LandClim	Harald Bugmann and team
4C	Martin Gutsch, Mats Mahnken		LPJ-GUESS	Thomas Hickler
ANAFORE	Gaby Deckmyn, Joanna Horemans		LPJ-GUESS	Anja Rammig
BALANCE	Thomas Rötzer		ORCHIDEE-CAN	Bertrand Guenet, Daniel Goll, Emilie Joetzjer, Anne-Sofie
BASFOR	David Cameron		PICUS	Manfred Lexer
Blome-BGC-MUSO	Horvath Ferenc		PREBAS	Francesco Minunno, Mikko Peltoniemi, Annikki Mäkelä
CARAIB	Louis Francois		SALEM	Patrick Vallet
CASTANEA	Christophe Francois, Eric Dufrêne, Nicolas Delpierre		SIBYLA	Katarina Merganicova
EFISCEN-SPace	Mart-Jan Schelhaas			
ForClim	Harald Bugmann and team			
FORGRO	Koen Kramer		**15/27 Models filled in table, Thanks**	
FORMIND	Friedrich Bohn			
GO+	Denis Loustau			
GOTILWA+	Santi Sabate, Daniel Sala			
HETEROFOR 1.0	Mathieu Jonard, Frédéric André			

Which country / large regions could you simulate?
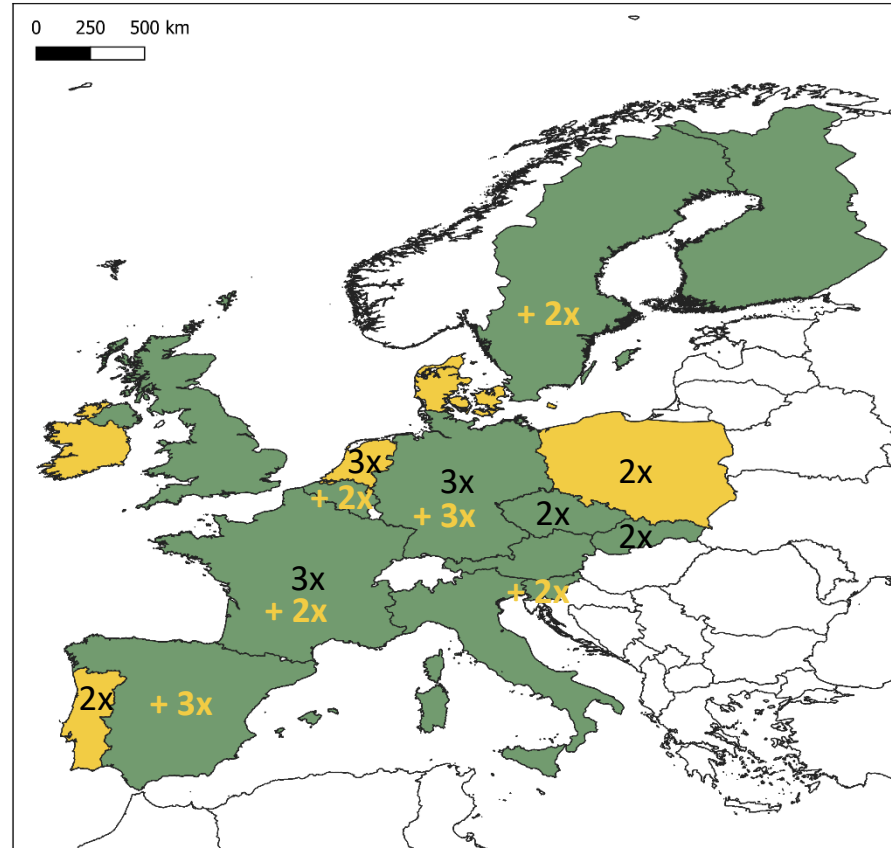

current coverage
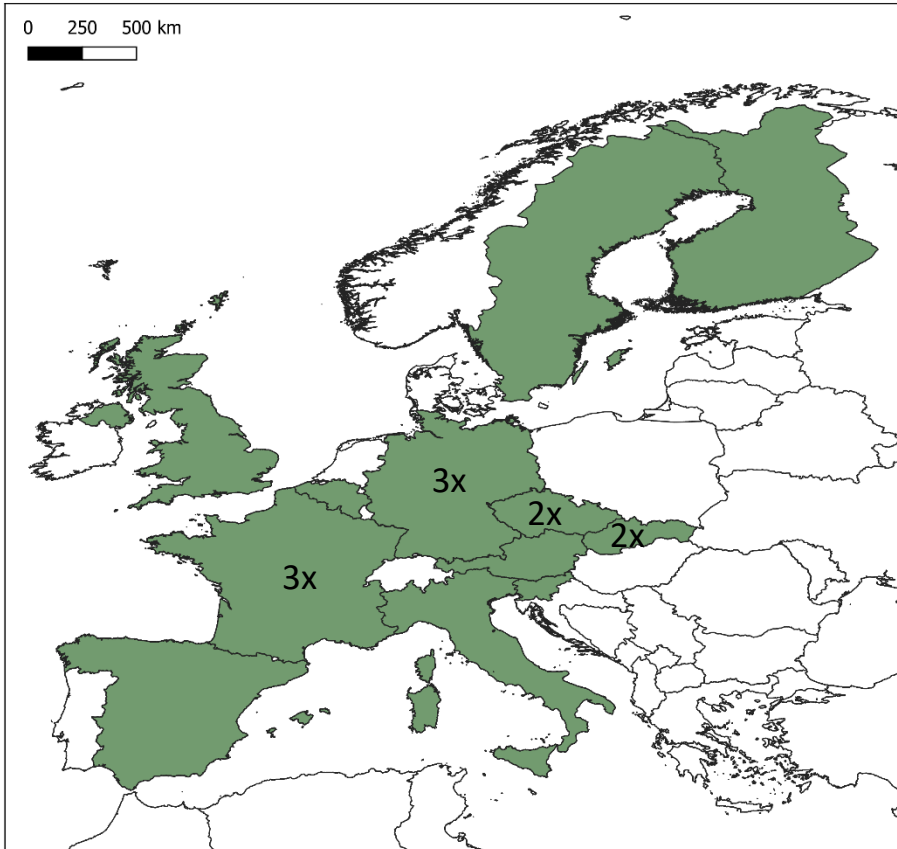
current coverage
potential additional coverage

easily

with more effort

Stand data:
- NFI data or similar (10x)
- "Spin-up" (3x) from planting/forest age/tree species composition
- Soil data
- what's available (2x)
- European Soil Database v2.0 (5x)
- Country-specific / own data (3x)

Data needs

Stand data:

- NFI data or similar (10x)

- "Spin-up" (3x) from planting/forest age/tree species composition

Soil data

- what's available (2x)

- European Soil Database v2.0 (5x)

- Country-specific / own data (3x)

Next part of session

- *"Towards a bottom-up assessment of the climate sensitivity of Europe's forests"* (Marc Gruenig, Werner Rammer)

- *"Drought-Mortality MIP from RESONATE"* (Katarina Merganicova)

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