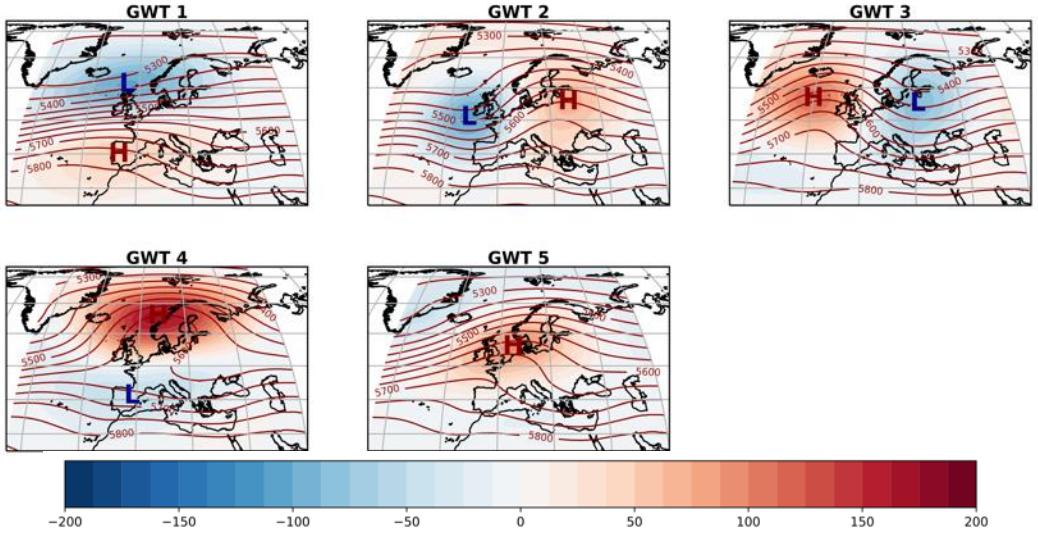
Climate Variability, Change & Impacts

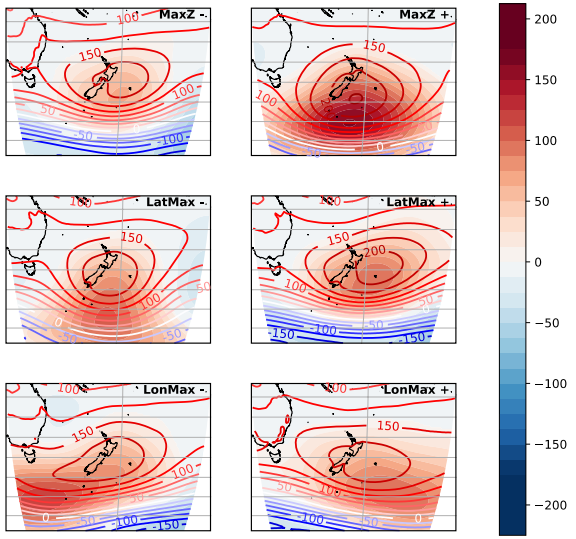
CRC team — Biogéosciences — CNRS / UBFC

Climate Variability & Change “Deconstructed”

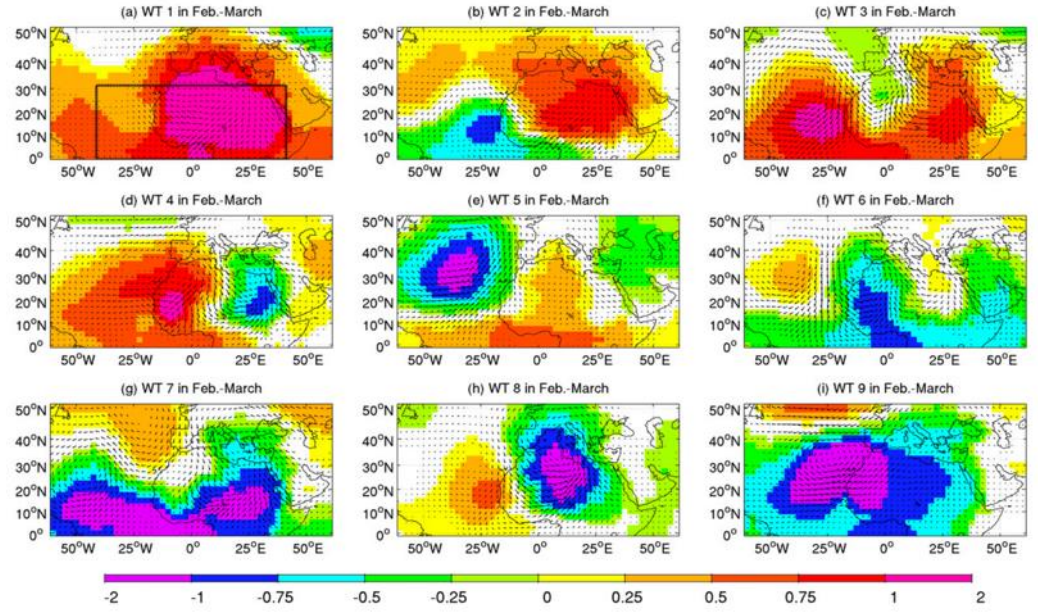
Europe



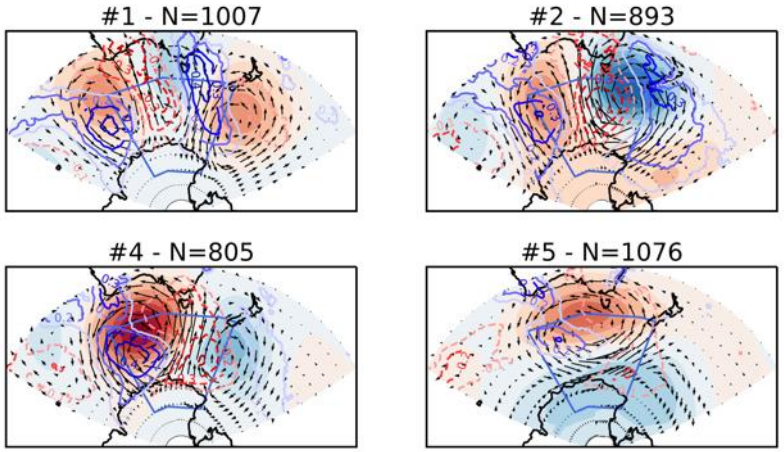
Southern Hemisphere



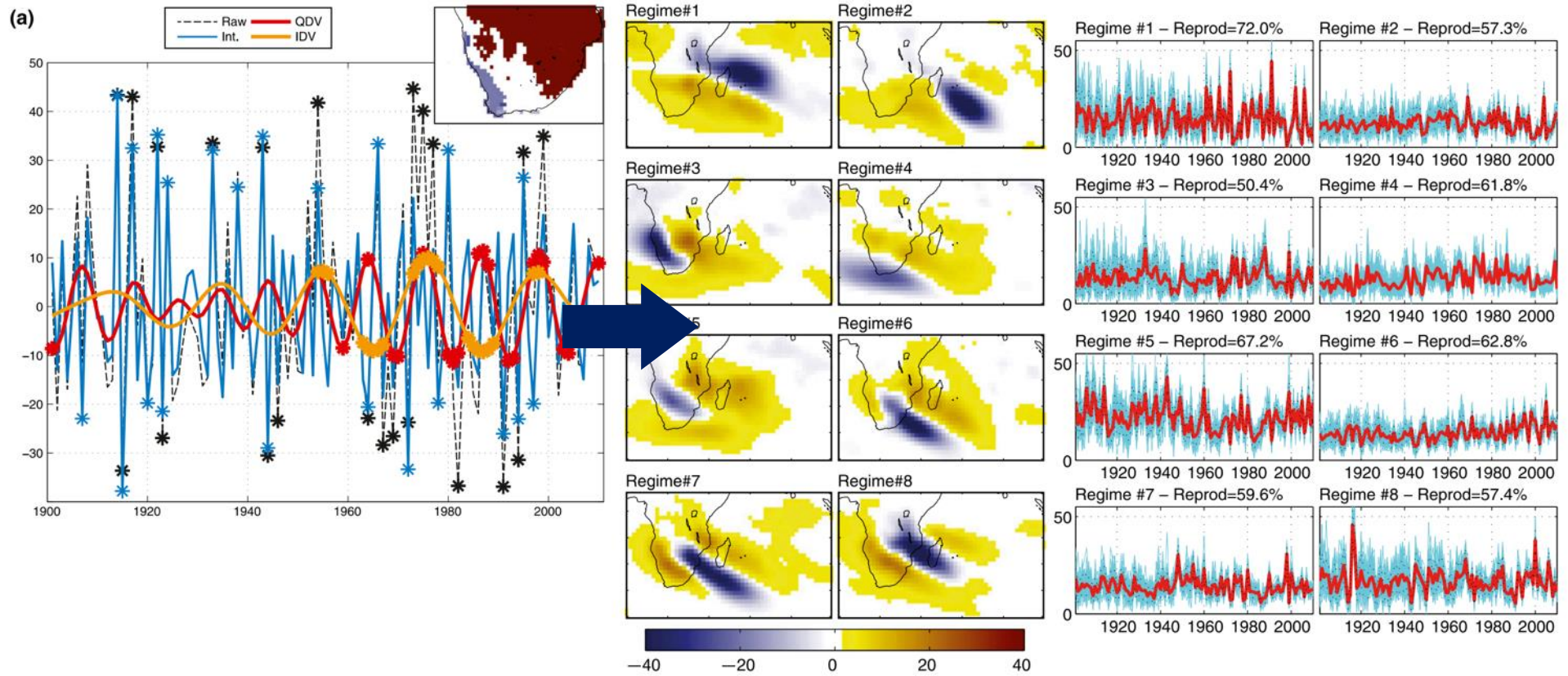
Africa / Tropics



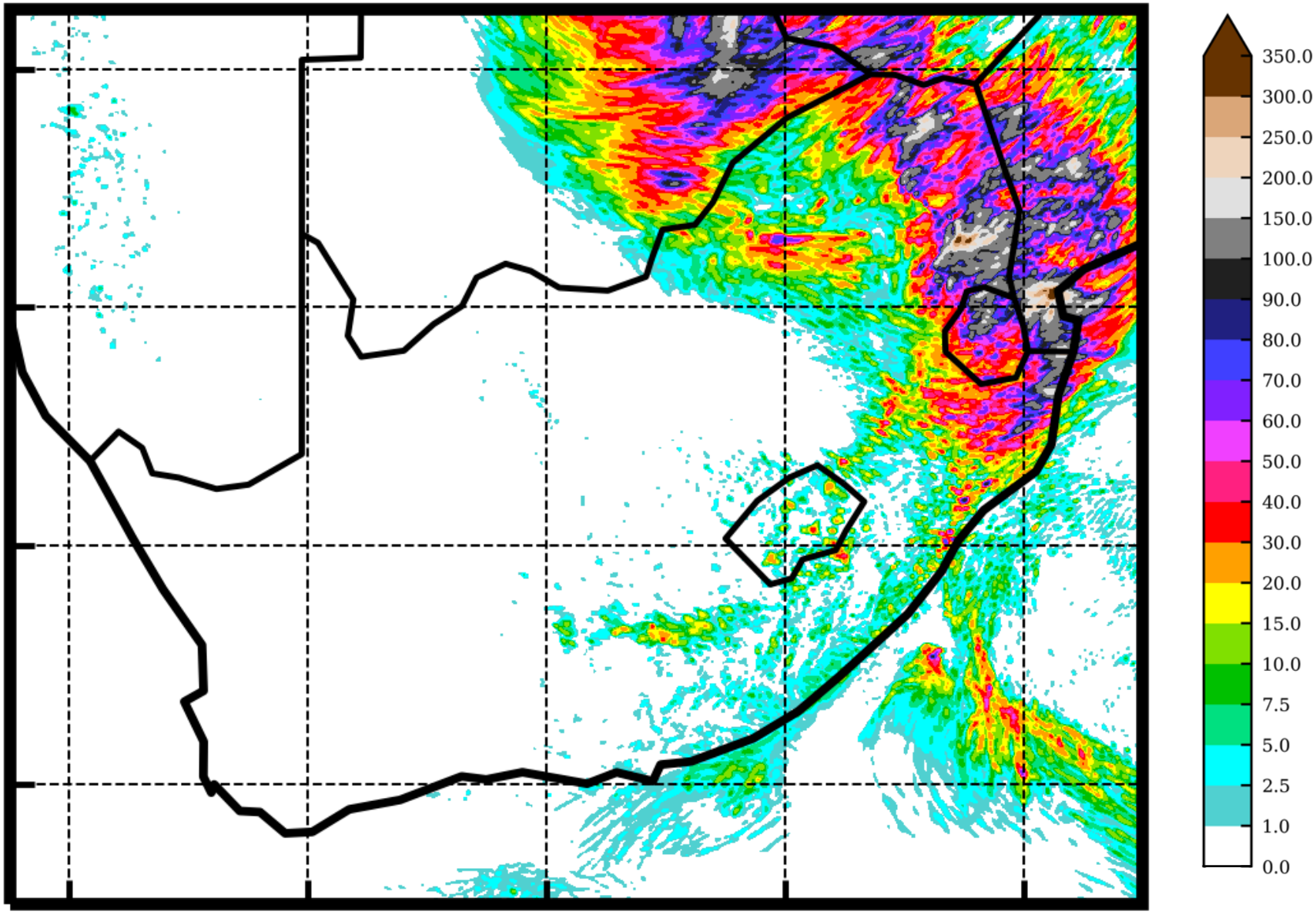
Antarctica / Polar Regions



Climate Variability & Change “Deconstructed”



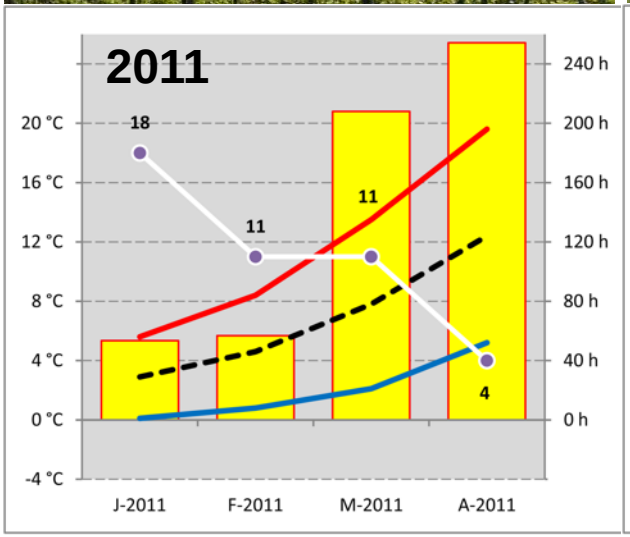
WRF (2km)

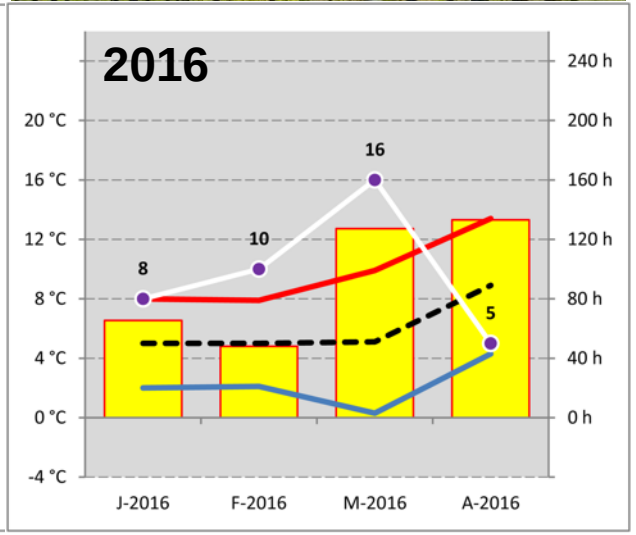

350.0
300.0
250.0
200.0
150.0
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
15.0
10.0
7.5
5.0
2.5
1.0
0.0

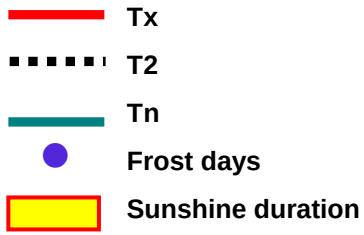
Climate & Phenology

ALISE-STE-REINE
May 9th, 2011

ALISE-STE-REINE
May 6th, 2016







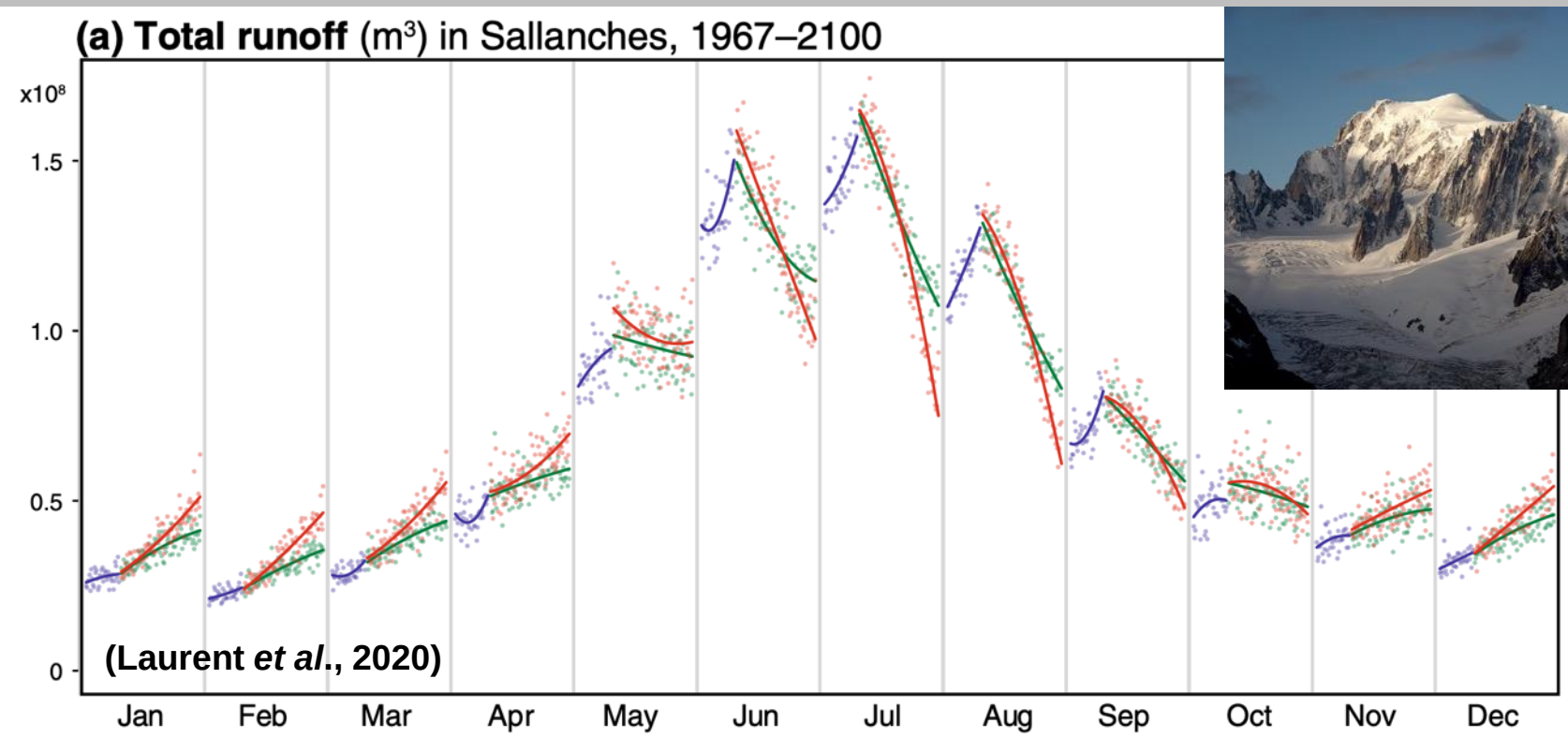
(Planchon *et al.*, 2019)

Climate & Phenology

ALISE-STE-REINE
May 9th, 2011

ALISE-STE-REINE
May 6th, 2016

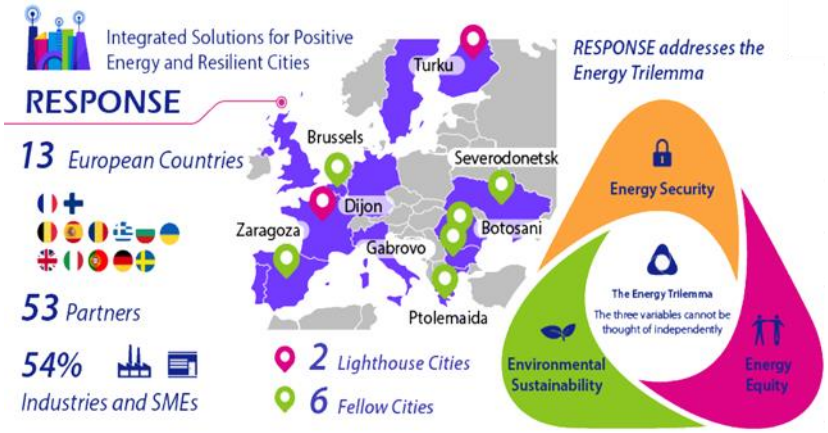
Climate & Hydrology

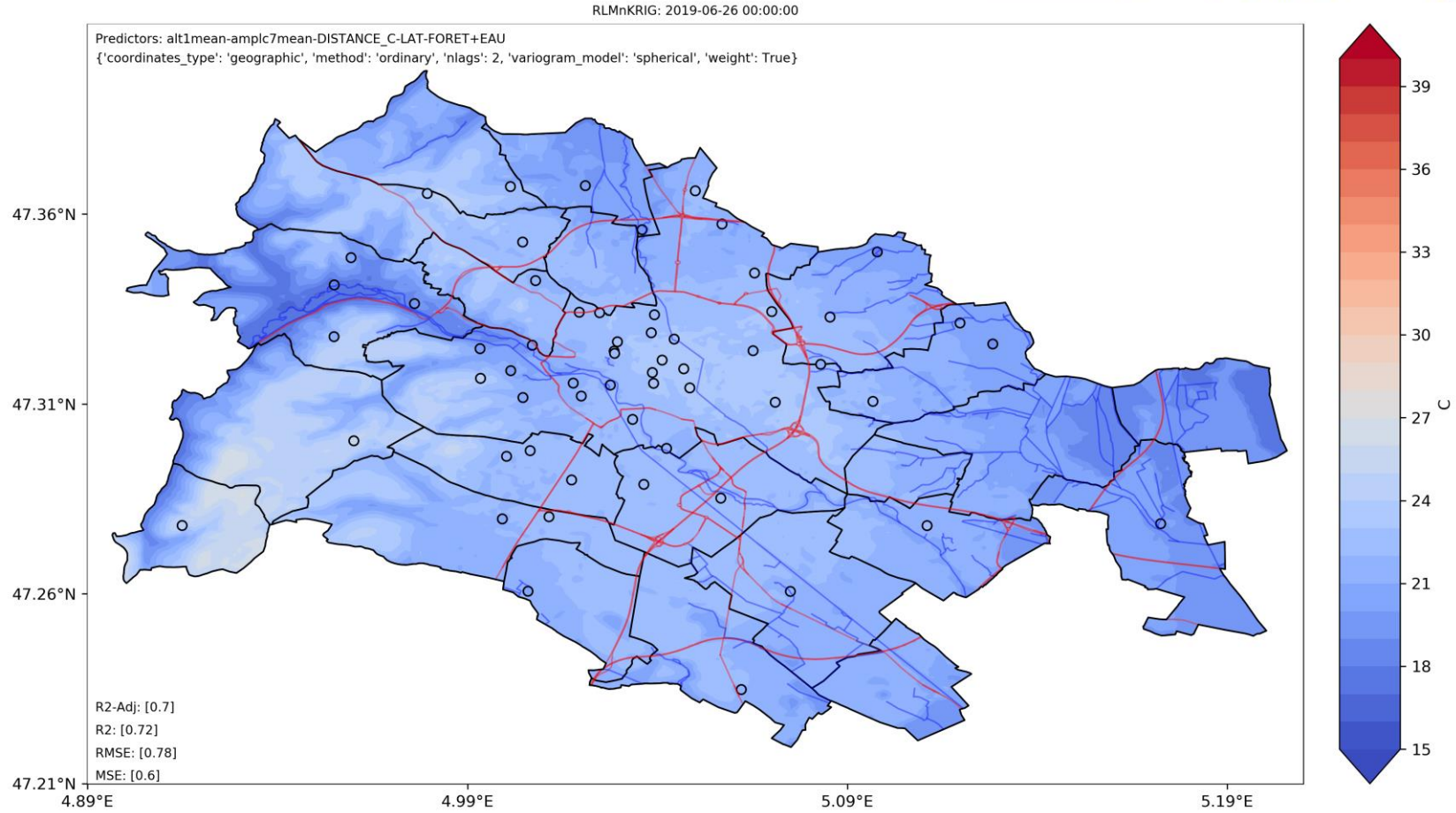


Urban Climate

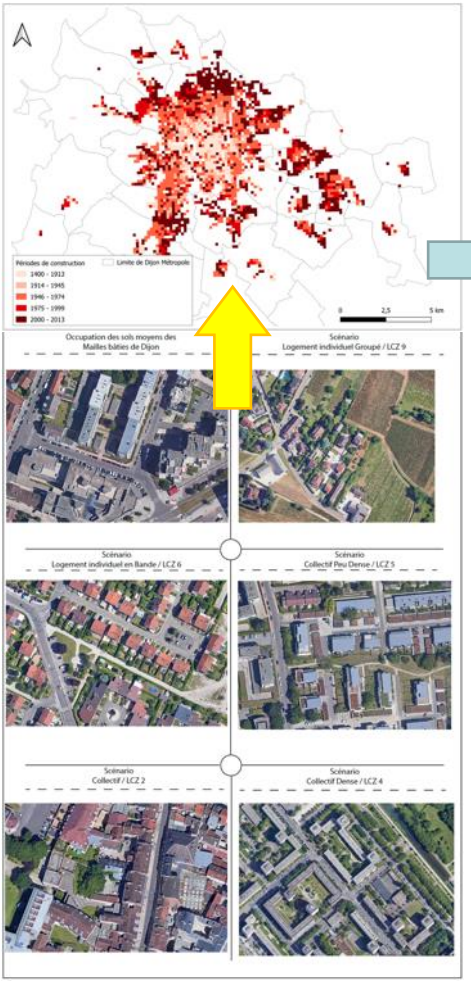
Near real-time monotoring and mapping of temperature

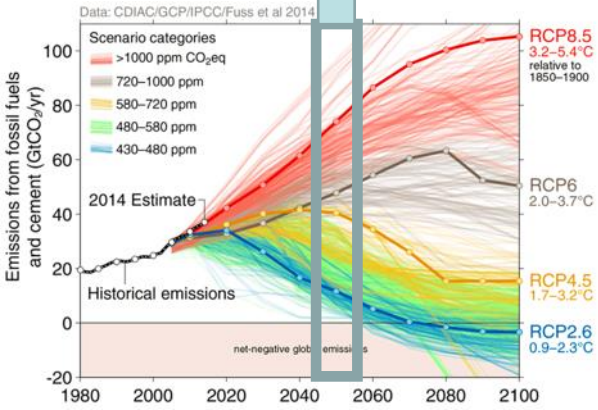
100-m resol. Every hour since June 2014

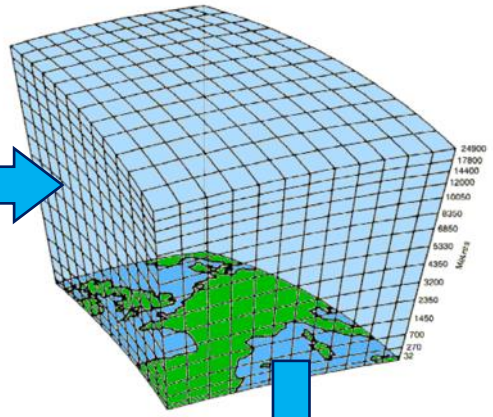


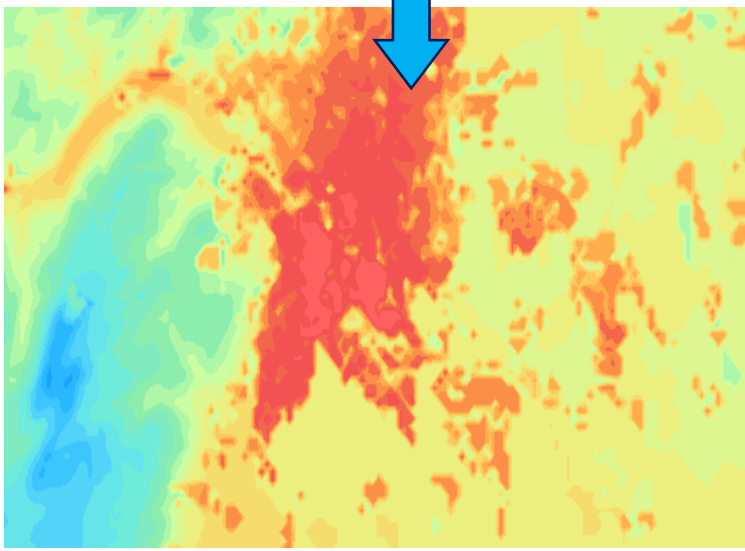


Urban Climate









Climate Change in a City Centre: Global vs. Local causes

- 100-m resol. resolved using LES grids coupled with town energy models
- Goal: improve cities resilience to CC & help urban population adapt to increasing heatwaves / UHIs
- For us scientists: causes driving space-time variability of urban climate

Climate Variability, Change & Impacts

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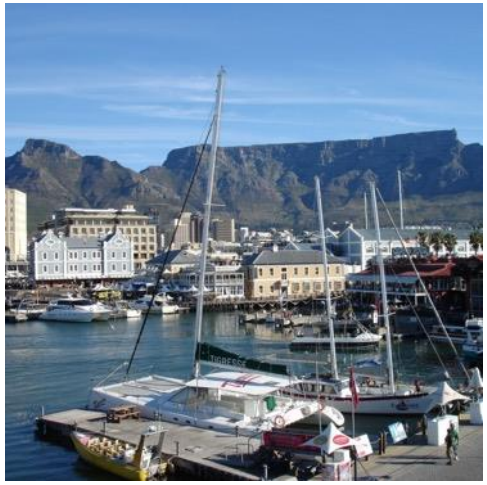

[benjamin.pohl@u-bourgogne.fr]

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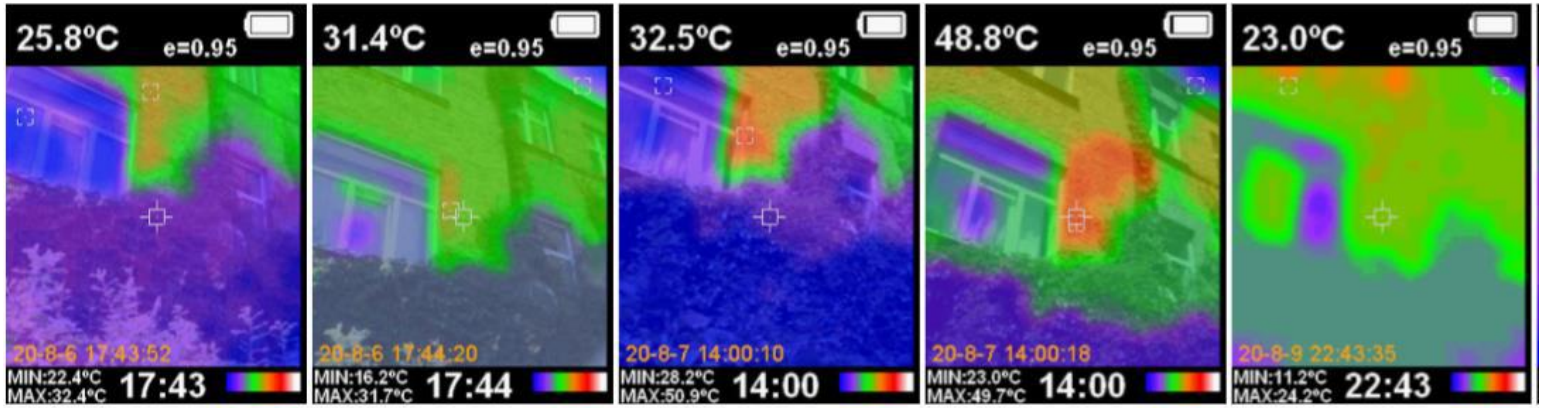
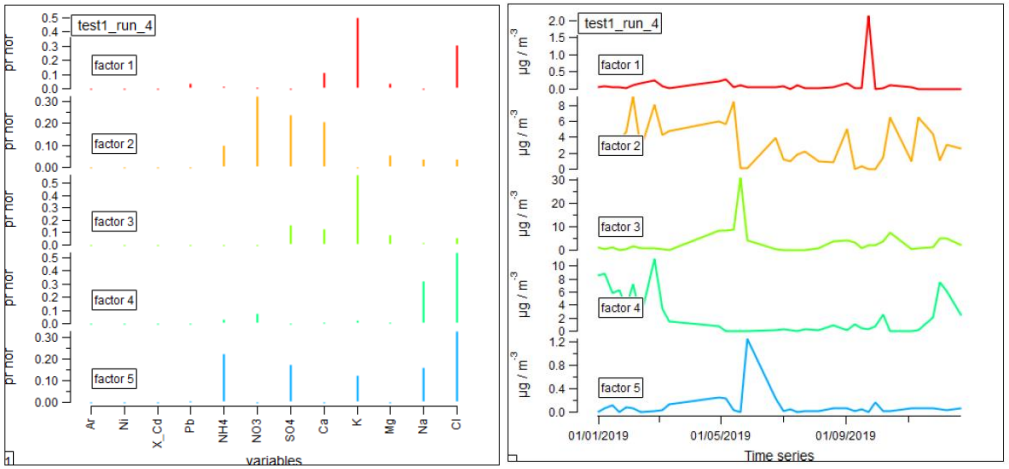
Climate and related factors in urban area; human well-being; urban development scenarious based on industrial and traffic variability forecasts. Role of aerosols in climate change.

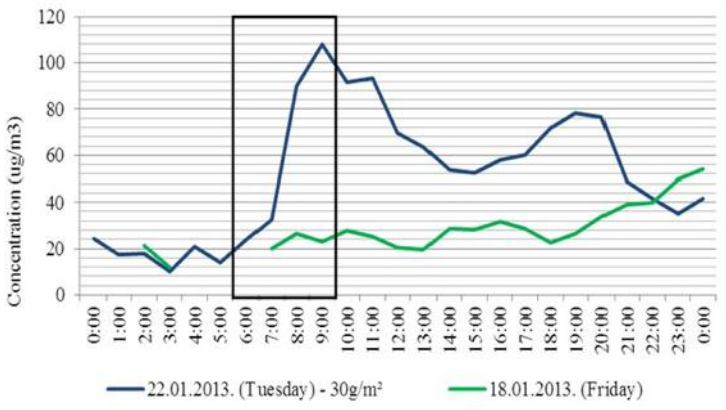
=> Urban climate, phytoremediation potential, climate change adaptation and remediation



=> source apportionment of atmospheric aerosols



Aerosol profiles, PMF from SoFi



PM_{10} concentrations (ug/m^3) at street canyon with (blue)/without (green) sanding

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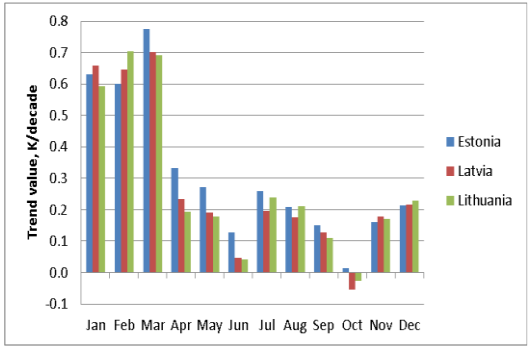
Assessment of climate variability and extreme events

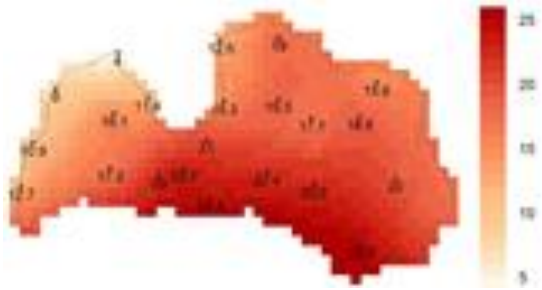
Precipitation			
Summer	Autumn	Winter	Spring
1928	1923	1926	1926
1930	1939	1927	1927
1939	1941	1928	1930
1944	1947	1929	1940
1951	1949	1944	1941
1955	1950	1946	1942
1969	1951	1953	1946
1975	1952	1963	1953
1976	1958	1968	1954
1978	1961	1980	1964
1980	1973	1989	1965
1981	1975	1991	1969
1983	1976	1994	1974
1993	1977	1998	1977
1998	1978	2001	1983
2006	1981	2006	1994
2010	1990	2010	1995
2011	1997	2011	1997

5. percentile
10. percentile
90. percentile
95. percentile

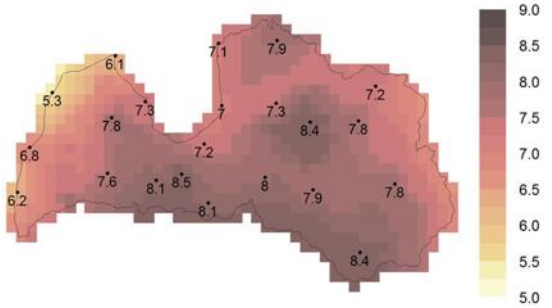
Extreme seasons according to precipitation in Latvia



Trend values for monthly mean minimum temperatures in 1951–2010 averaged for the countries (Jaagus et.al, 2016)

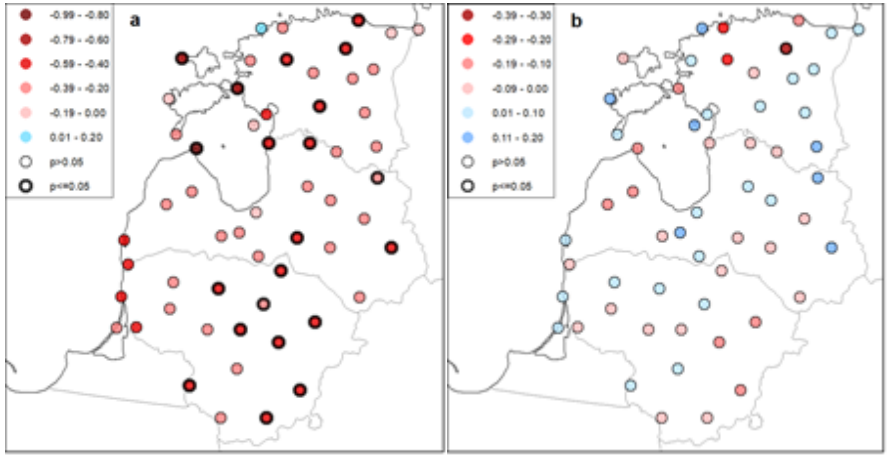


Summer days index TX>+25°C



Diurnal temperature range index

← for the last decade more wet seasons characterized for winter



↑Changes in snow cover duration (days/year) (A) and maximum snow depth (cm/year) (Sen's slope method) (B) at meteorological stations in the Baltic states in 1961- -2015. (Rimkus et al., 2018)

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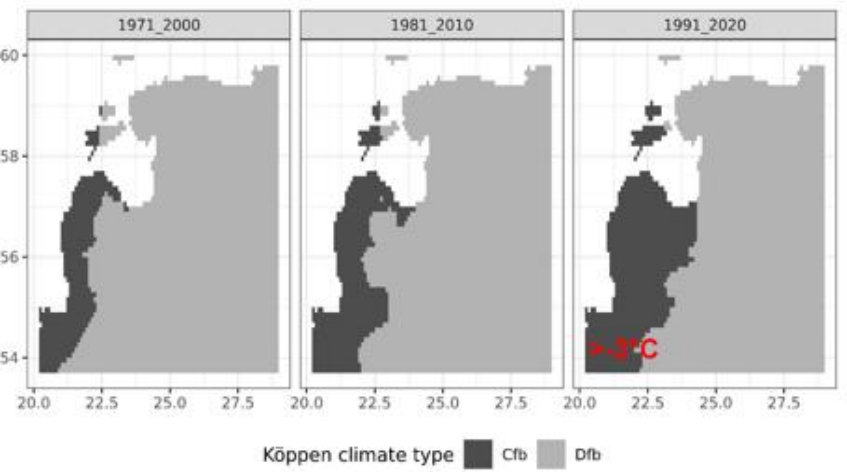
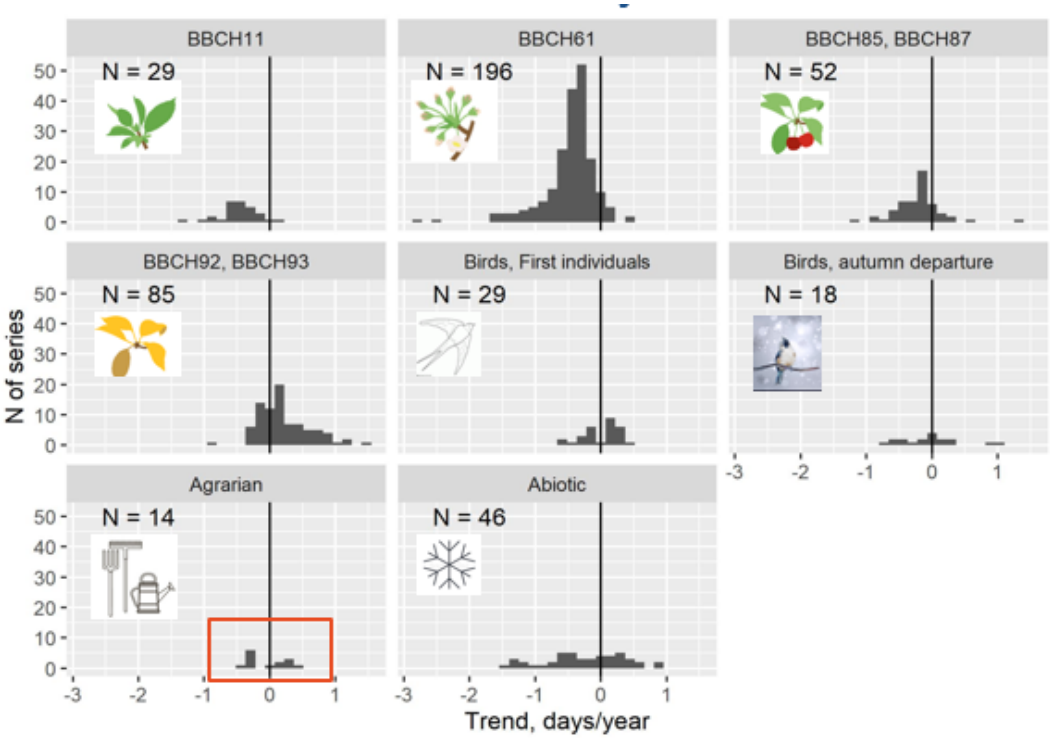
Climate change as a driving force to ecosystem changes. Bioclimatology

gunta.kalvane@lu.lv



Climate types shifts in Baltic region: Dfb (warm-summer humid continental climate) to Cfb (temperate oceanic climate)

Daily gridded air temperature data from e-obs version 21.0e (Cornes et al. 2018).



Phenological changes in Latvia (1970.-2018.)

Article:
https://essd.copernicus.org/articles/13/4621/2021/

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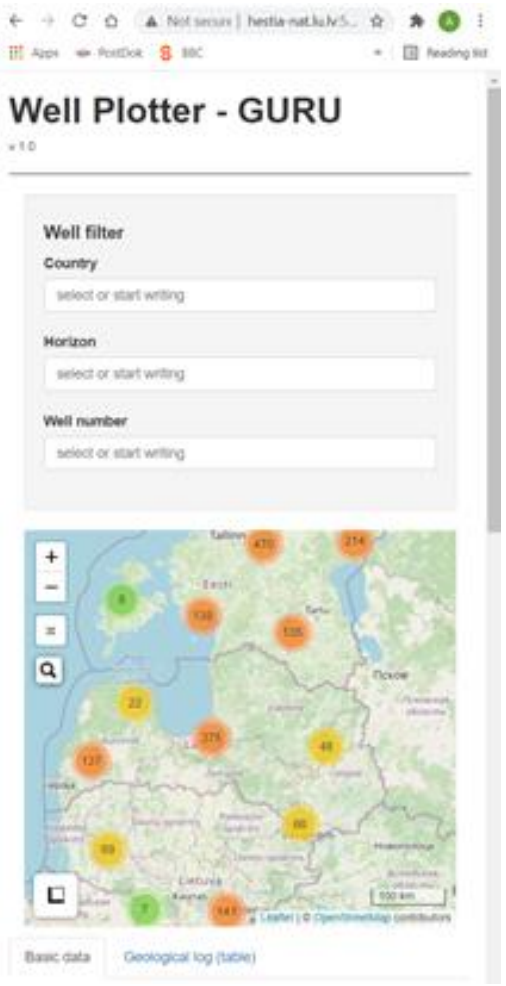
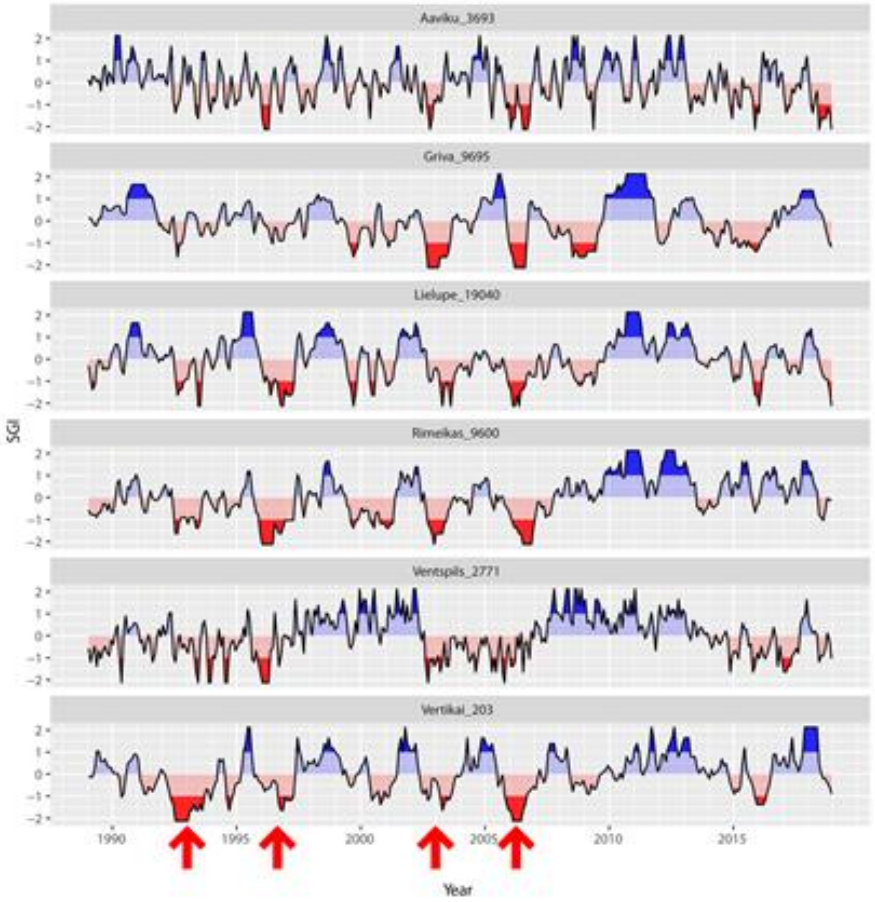
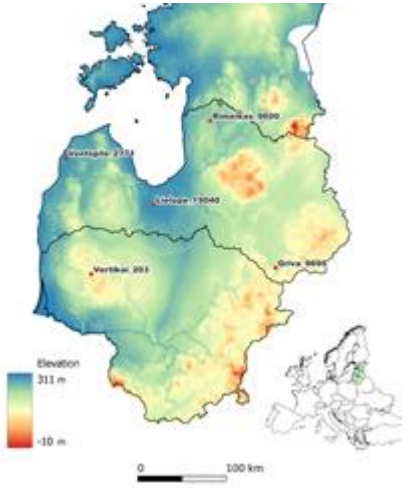
Groundwater dynamics under climate change

andis.kalvans@lu.lv





Groundwater drought in the Baltics from 1991 to 2018



Most complete groundwater level data base for the Baltic states:
1830 monitoring wells

Department of Social Ethics, JGU

(Prof. Dr. Gerhard Kruip; Edith Wittenbrink)

- Coordination of Lab Diversity & Migration at JGU
- Ongoing Project: „A FEARFUL HOPE: IMAGINING A BLUEPRINT FOR A SUSTAINABLE FUTURE" with Scotland Hub
  - Climate Summit 1-12 November 2021 – GO Project at COP26 in Glasgow
  - https://www.scotland.uni-mainz.de/cop-26/
- Further interests:
  - Climate crisis as a cause for migration
  - Environmental and climate justice from an ethical perspective
  - Christian activities for the "care for creation", role of the churches
  - Contact with Students for Future & Scientists for Future
- Contact: ewitte@uni-mainz.de

JOHANNES GUTENBERG UNIVERSITÄT MAINZ

JG|U

INNOMARK-UVEG

- **Research team composed by 6 PhD researchers** – Irene Gil, Gloria Berenguer, Beatriz Moliner, Martina G.Gallarza, Maja Seric and Maria-Eugenia Ruiz* - working together for more than one decade in the following research lines: ICT, Innovation and Sustainability in Retailing and Tourism, Business-to-Business relations, and Consumer Behavior.

- **Aim: to promote research and technological development.** This is achieved providing a wide range of consultancy services in the field of market research and support in research design and statistical techniques for data analysis.

* Contact email: M.Eugenia.Ruiz@uv.es

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INNOMARK-UVEG

- **Wide experience in R&D&i projects** at national and international level, both as coordinator and partner

- INNOMARK-UVEG has been partner in several projects financed by the EIT Climate KIC (Certifying Green Professionals, BioHorizons-Horizon scanning the European Bioeconomy, Pioneers into Practice)

- **Consulting and training activities**

- **Located in the Valencian region (Spain)** as a result of the research stages of INNOMARK-UVEG members, it has well-established links with researchers working in several Spanish universities as well as in UK, France, Italy, Croatia, USA, Colombia, Ecuador…

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INNOMARK-UVEG

INNOMARK-UVEG can add value to projects in the following:

- Supply chain management and logistics
- Measuring user acceptability and marketing evaluation of technology.
- Sustainability in services companies (e.g. retailing, tourism companies)
- Business plan: Macroenvironment and microenvironment analysis
- Market segmentation and positioning
- Research design and formulation (Definition of the information needed, Secondary data analysis, Qualitative research methods -focus groups, in-depth interviews-, Quantitative data -questionnaire design, surveys, sampling process; Measurement and scaling procedures -reliability and validity-)
- Research methodology (exploratory and conclusive research)
- …

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