



Schweizerische Eidgenossenschaft  
Confédération suisse  
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Swiss Confederation

Federal Department of Home Affairs FDHA  
**Federal Office of Meteorology and Climatology MeteoSwiss**

# Of CATs and Clouds – Climate analysis between science and operation

adminR Spring Meetup Zürich

08.05.2025

Rebekka Posselt

MeteoSchweiz, Abteilung Klima

A person is seen from behind, sitting on a dark, rocky ledge. They are looking out over a vast, undulating sea of white clouds that stretches to the horizon. The sky above is a mix of soft blues and oranges, indicating a sunset or sunrise. The sun is a bright, glowing orb just above the horizon line, casting a warm light across the clouds and sky. The overall mood is serene and contemplative.

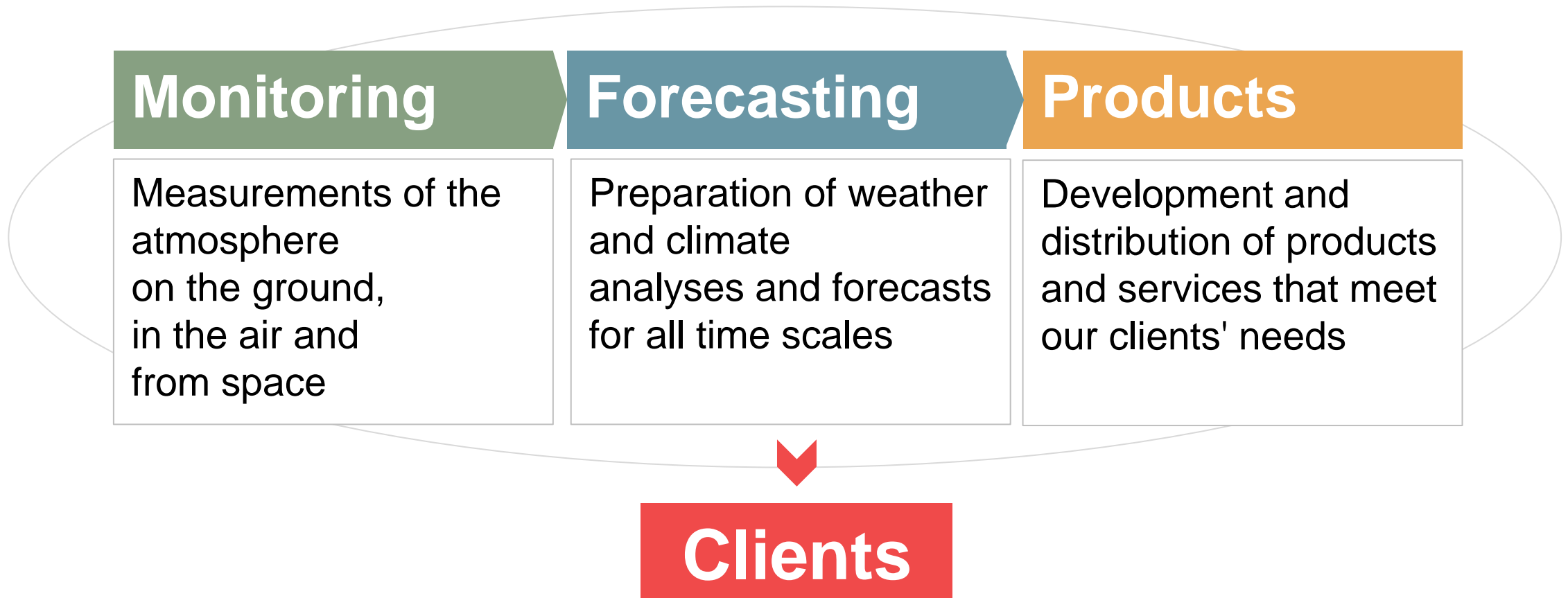
# MeteoSwiss

MeteoSwiss is Switzerland's national weather service. We record and forecast the weather and climate, thus generating benefits for society, business and the environment in the short and long term.





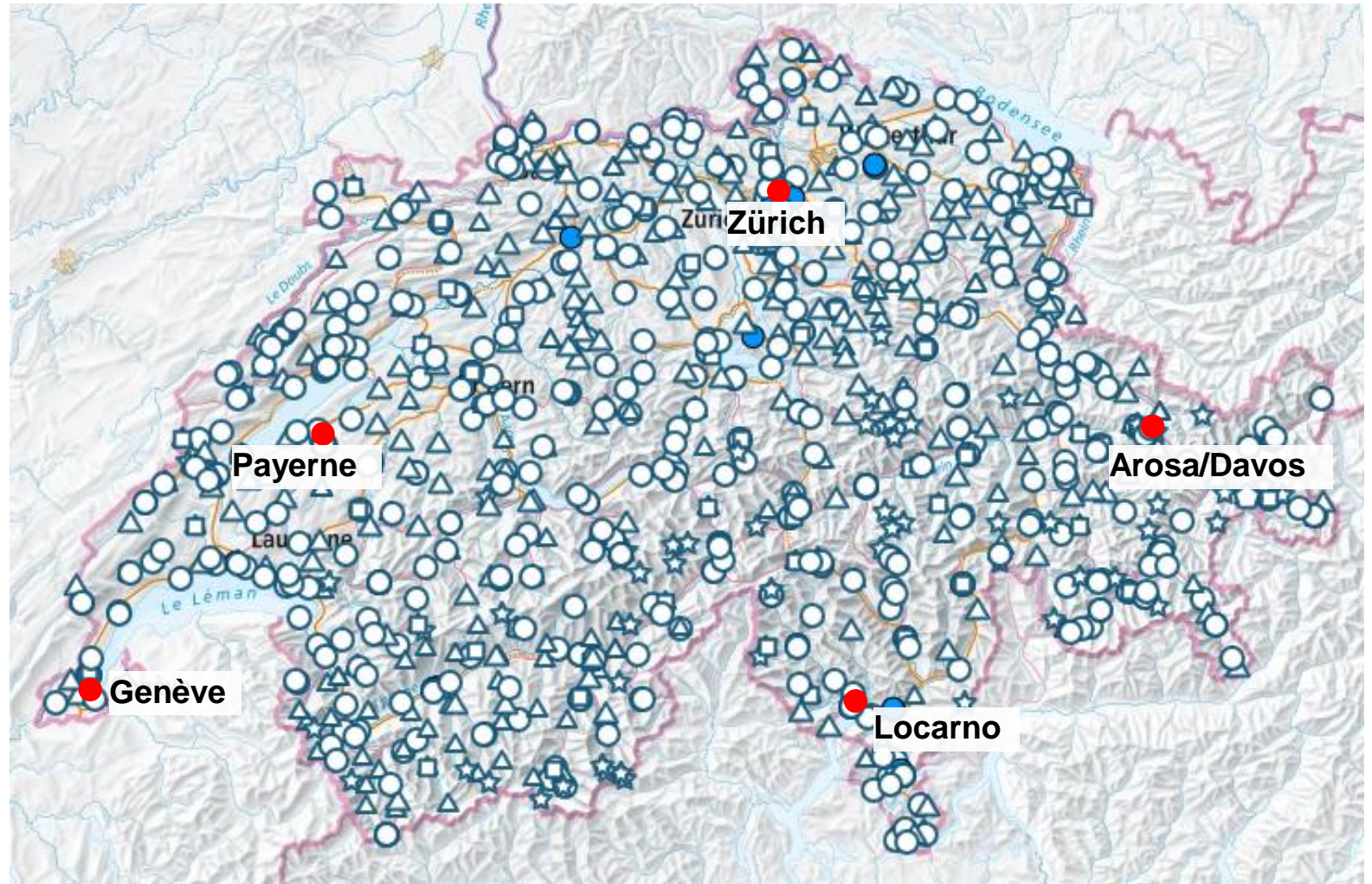
# Our core tasks





# Our sites

- 5 centers in all language regions
- > 350 employees
- ~ 260 automatic measurement sites
- 5 radars and other remote sensing instruments
- > 100 Million data values per day







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Eidgenössisches Departement des Innern EDI  
Bundesamt für Meteorologie und Klimatologie MeteoSchweiz

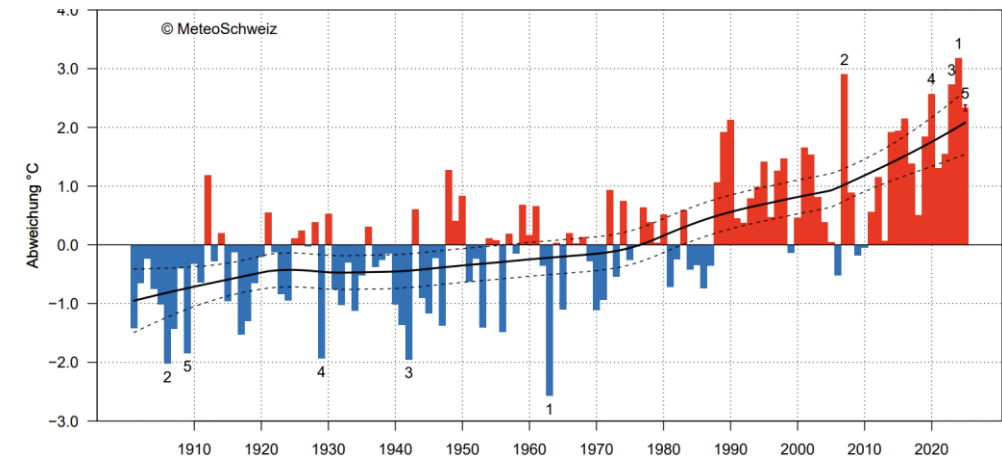
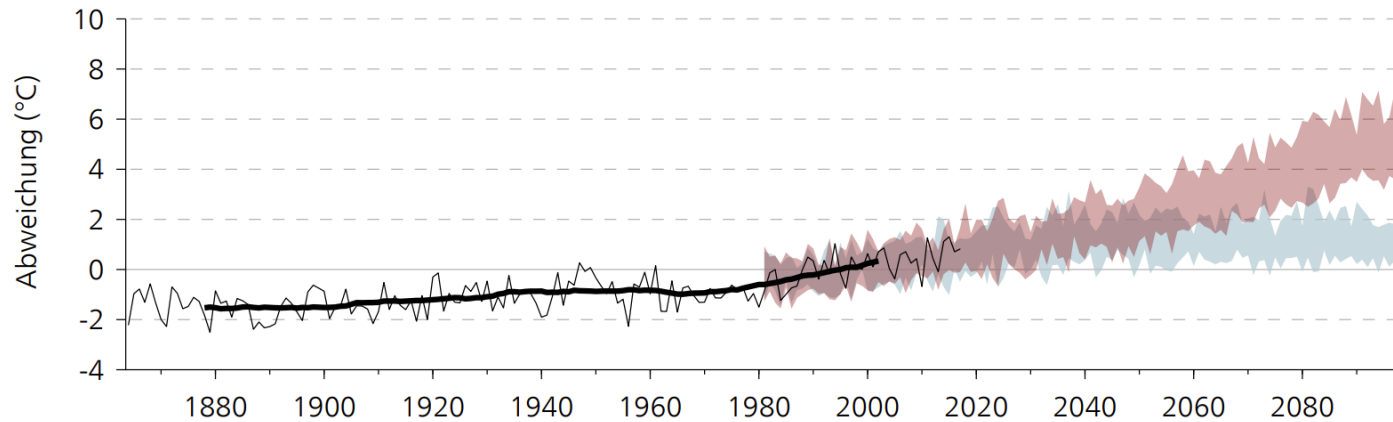
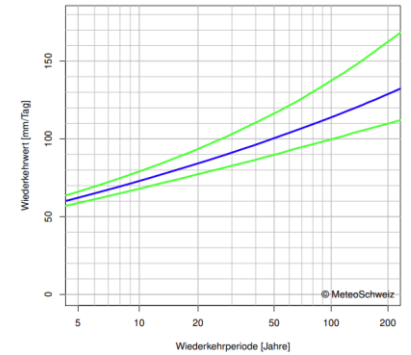
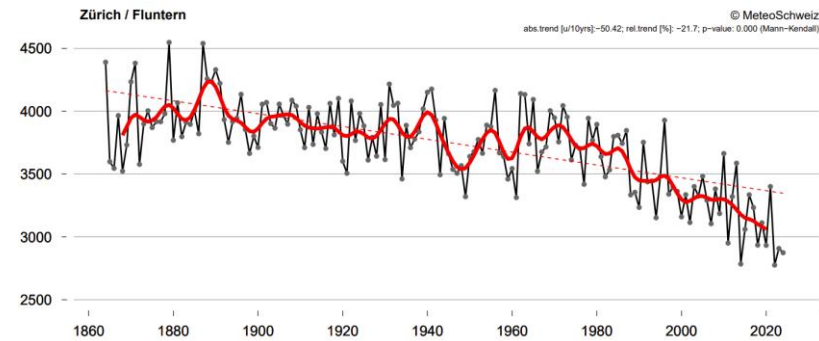
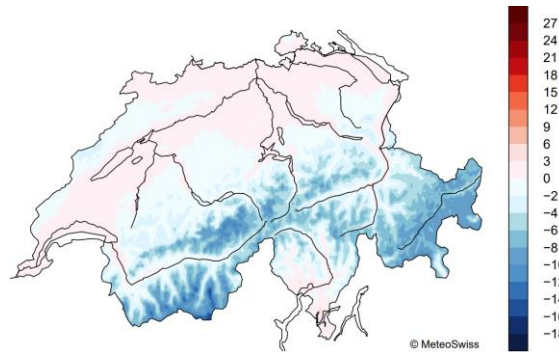
## Climate Division

As Climate Division, we play a key role in helping to achieve **net zero targets**, **protect** and **adapt** to the **impacts** of climate change and **extreme weather events**, and **inform the public** about the Swiss climate and its changes.





# Services and Products

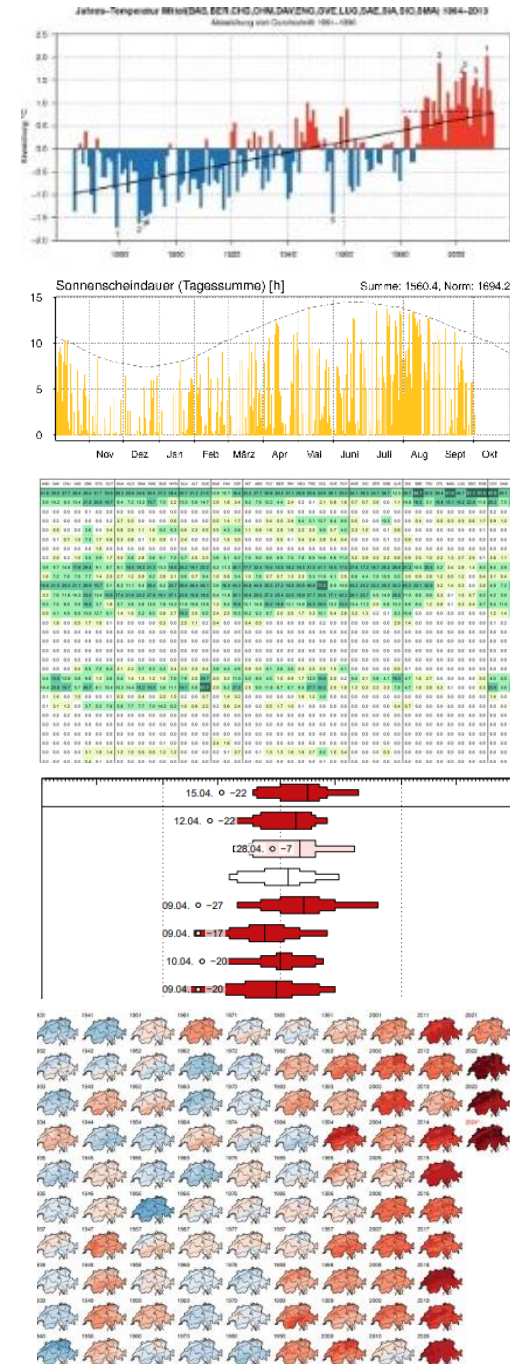
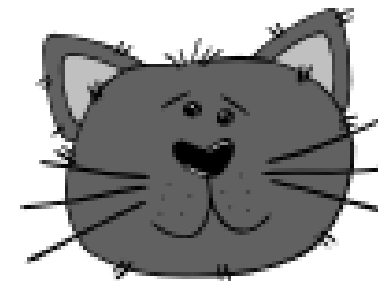




# Climate Analysis Tools

- Climate Monitoring at MeteoSwiss  
→ **Climate Analysis Tools = CATs**
- ... statistical analysis of climate data
- ... visualisation of climate data
- ... regular provision of climate products

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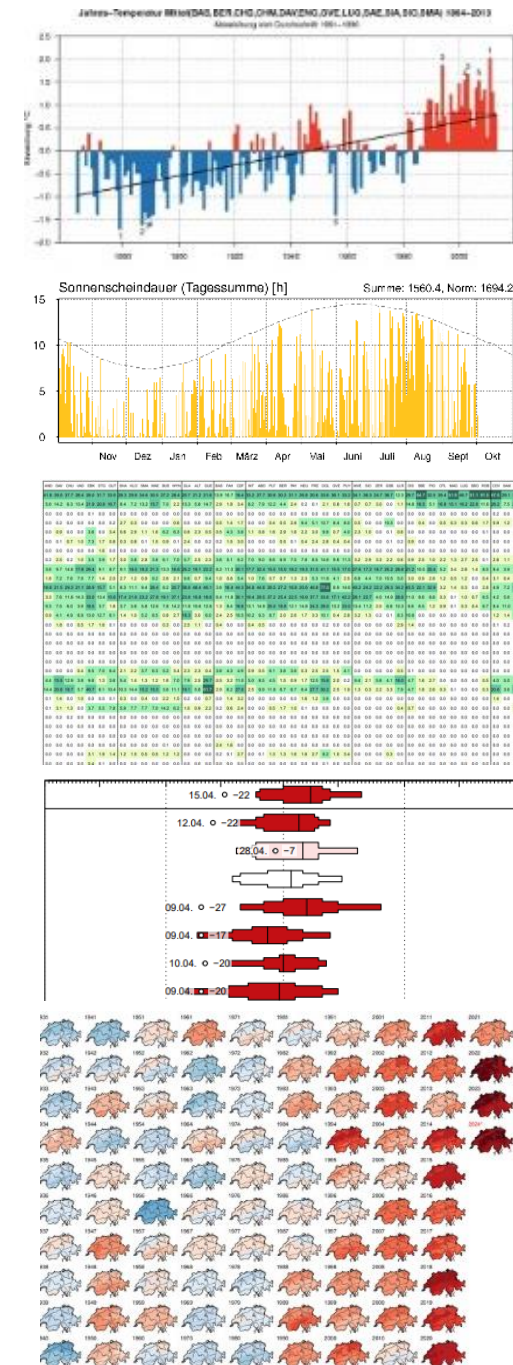
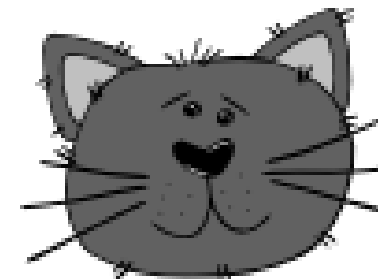




# Climate Analysis Tools

- Regular provision of climate products
  - ... set up production scripts incl. scheduling
  - ... monitor and troubleshoot production
  - ... support developers/scientists community
  - ... provide contact for IT questions

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# Climate Analysis Tools

## How it started

- 2006: Development concept based on R
  - Goal: Provision of standardized tools for climate analysis that can be executed both automatically and manually
- By 2009: Migration to CATs finished
- 2010: Internal product platform
  - Hosting for CAT-products

... continuous development and innovation



# Climate Analysis Tools

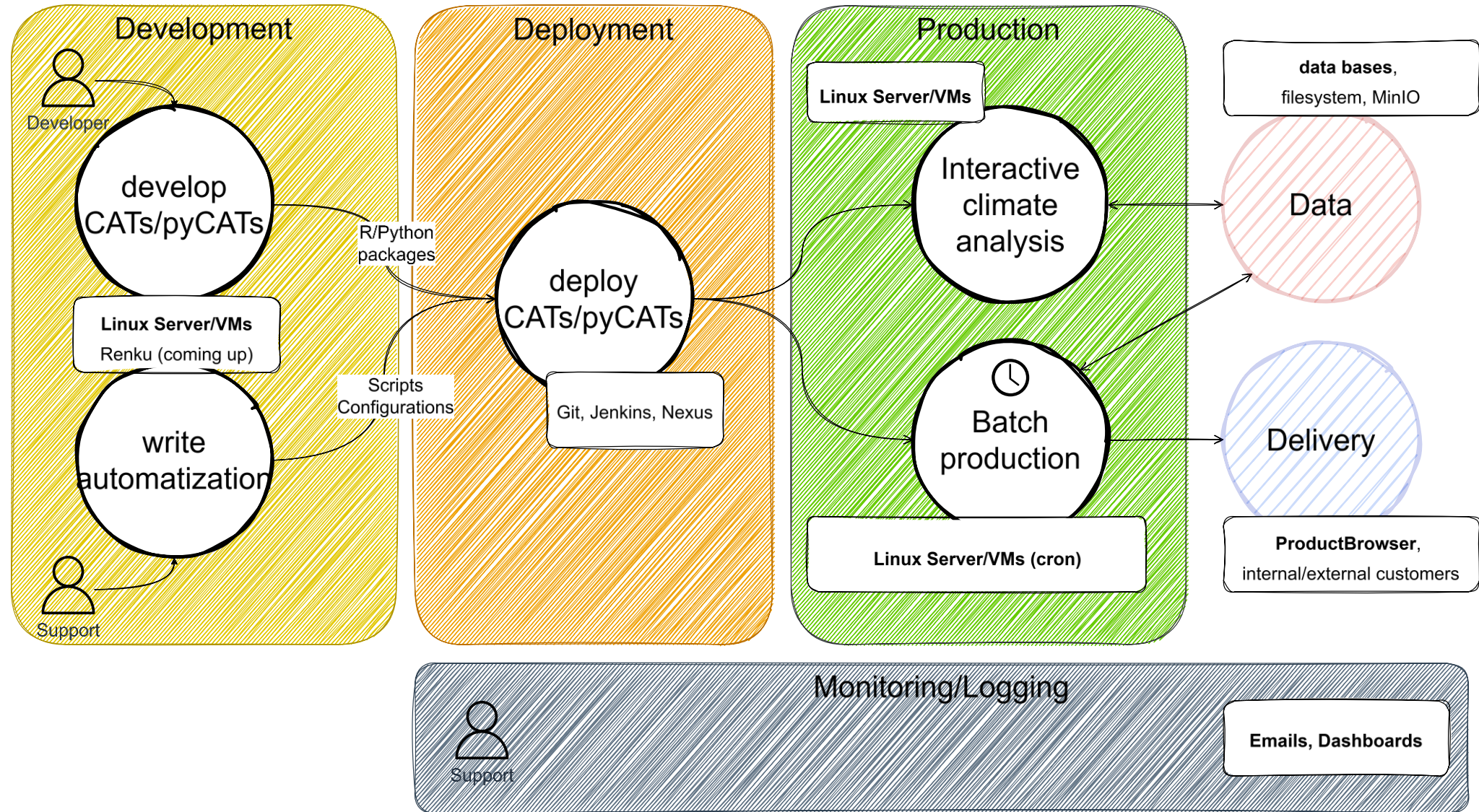
## Some statistics

- CATs:
  - ~50 + 35 (R, CATs + cat.helper), 9 (python)
  - > 350 CRAN Pakete (as dependencies)
- Developer/Maintainer:
  - 12+ (permanent)
  - Temporary employees, interns, students, Zivis
- R-Versions:
  - 2.?? → 2.15 → 3.0 → 3.2 → 3.6 → 4.0 → 4.4 (coming up)
- Products created (→ ProductBrowser/Web)
  - > 250 products with > 3 Mio Plots/Tables





# CAT Workflow (now)





# CATs → Cloud



- RZPlus → MeteoSwiss GameChanger Program
  - Deploy a resilient, scalable and multi-cloud ready hosting landscape
  - Modernize and migrate applications
  - Adapt operating processes, ...



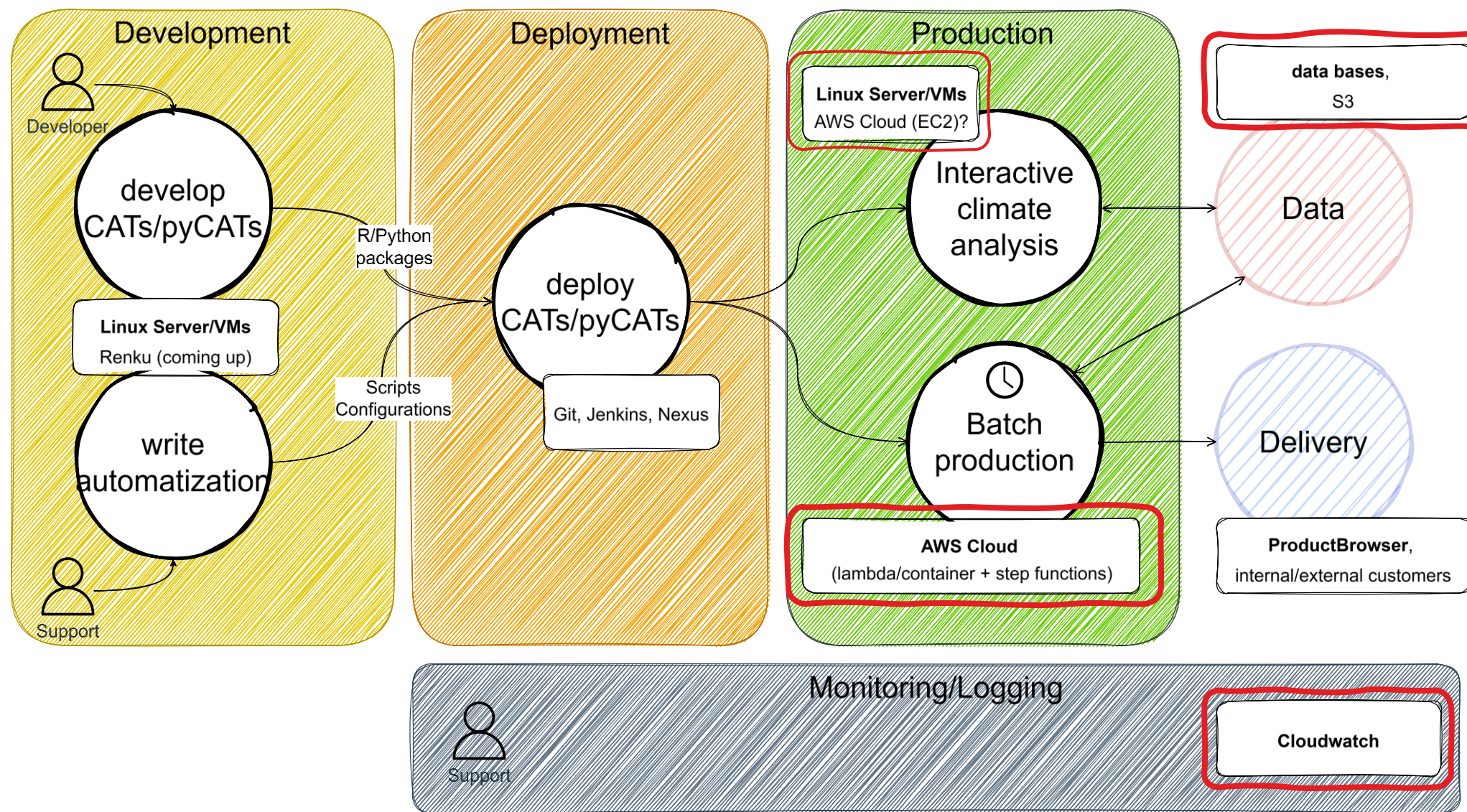
- CATs2Cloud project
  - Integrate the CATs into the new computing landscape
  - Modernize the CATs themselves
  - Revise the operation and production of CAT products
  - Update the CAT development process and guidelines

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# CAT Workflow (then?)





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