



## **Climate Analysis Tools – An operational environment for climate products**

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For climate monitoring, but also to issue early warnings and monitor extreme events, the necessity for up-to date evaluation of climate data arises. Applications include regularly updated temperature trend and extreme value analysis, pollen concentrations and drought conditions monitoring, but also the provision of past temperature and precipitation fields to compare current events with historical ones. For these applications, MeteoSwiss developed a framework aiming at the development and implementation of new climatological and statistical methods and their operational application. The products are internally available on an interactive product browser, and partially also published on the public website of MeteoSwiss or sent to customers.

The Climate Analysis Tools (CATs) are developed by climate researchers and include statistical algorithms, data visualization procedures, and various general helper functions following guidelines to facilitate maintainability. The tools are pooled in several R packages including mandatory documentation and are installed on an operational system that is maintained by the IT department. The fully automated production for product dissemination is monitored by IT professionals.

Scripts and R packages are administrated in GIT, a code versioning system. New package versions committed to GIT are automatically built and installed on the system, as are automation scripts. This procedure enhances the reliability of the CAT framework as changes are documented and traceable. Developers work on their own code copy and commit changes to the remote repository. Collaboration is greatly facilitated, as code can be simply merged if more than one developer is working on the project. A tag containing the version triggers the building and installation process.

In this contribution, we will give insight in our technical maintenance tools and discuss current plans for extensions. Beyond this technical part, we will provide an overview of our currently available products, including time series plots, maps as well as tabular climate products.