Climatology has a strong history in the greater region of Tyrol, South Tyrol, Trentino and Belluno, where the climate of the regions has been described in the work of Julius Hann (1883 – 1911) and Franz Fliri (1975). A lot of applications in public services, engineering, regional and urban planning, science and education, civil protection, construction, tourism, farming or forestry still depend on data and interpretation of this historical scientific work.

Measurement of meteorological data has changed, as well as station network, which is one of the most dense in the world. Today’s computing power allow enhanced techniques of data aggregation and statistics to be applied to the huge amount of data available in the region. They help to document changes of the regional climate throughout the past decades (where measurements are available) and to learn about possible future developments.

**Measurements - Data Quality - Homogeneization**

- 1460 data series
- 406 complete station series
- 1.3 Mio data values
- 13 providers of data
- 11 main parameters

Multi-level quality control and correction of about 1% of data

Homogeneization to account for changes in measurement methods, station location or surrounding and get comparable data sets over entire measurement period.

**Spatial analysis and maps**

**Thermal parameters:**
- Non-linear profiles and non-Euclidean distances (Hiebl J, Frei C. 2015)

**Hygric parameters:**

**Radiation dataset:**
- Olefs M (2013)

160 maps at resolution 500 m

- temperature
- precipitation
- snow and fresh snow
- global radiation and sunshine duration
- derived parameters

**Register of glaciers**

Common dataset of 3 participating countries containing information on areal and length extent and mass balance where available.

**Perspective climate (future)**

Dynamical downscaling of ECHAM5 under A1B scenario using COSMO-CLM:

- High confidence in thermal parameters
- Medium confidence in precipitation parameters
- Low confidence in future extreme events

**Convection climatology – poster P3.34**

Trends in alpine temperature and precipitation - presentation O14.3

GET DATA, MAPS, INFORMATION AT www.3p clim.eu