![the CM SAF R TOOLBOX]

EUMETSAT CM SAF CLIMATE MONITORING

the CM SAF R Toolbox Cheat Sheet
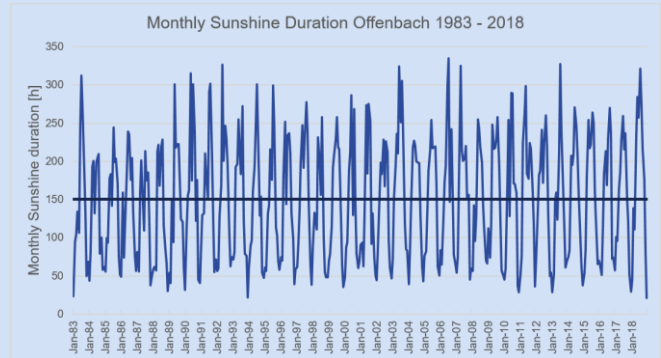## #2 How to make a climatological mean

Background

Climatological Mean
Describes the mean state of a climate variable.

Climatological Normal
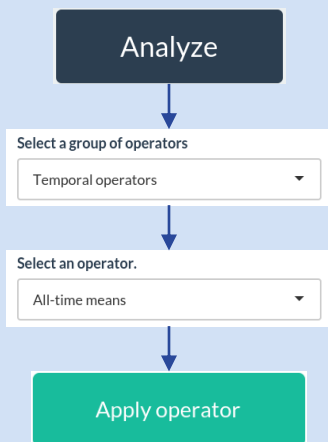A climatological mean of at least 30 years.

Climate Analysis
A climatological mean is the starting point for climate analysis, such as climate variability or anomalies.

Climatological Mean ───────

Workflow

Analyze

↓

Select a group of operators
Temporal operators ▼

↓

Select an operator.
All-time means ▼

↓

Apply operator

Click on **Analyze** and choose a .nc-file, which contains your Climate Data Record.

Select a group of operators: Temporal operators are applied to all time steps of a .nc-file.
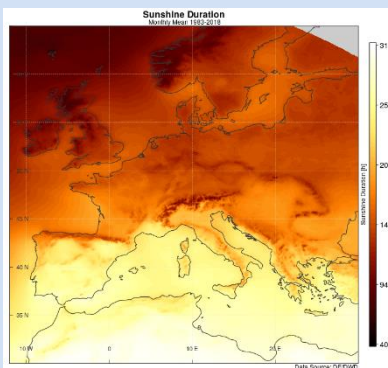
Select an operator: All-time means provides one spatial map including the mean of all time steps.

Click on the **Apply operator** to start the processing. The resulting .nc-file will be written to your output folder.

Good to know

- CM SAF data can be downloaded for free via *https://wui.cmsaf.eu*
- Use the CM SAF R Toolbox to **Prepare** your data (see *#1 From tar to nc*)
- A Thematic Climate Data Record (**TCDR**) is a long-term data record suitable for climate analysis
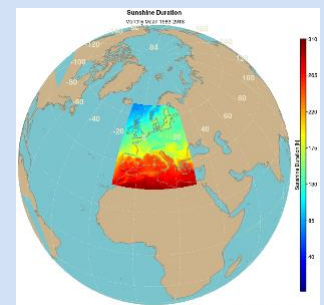
Results

Explore the numerous options to customize your plot.

Analyze the distribution of monthly mean sunshine duration:

- Where is the sunniest region?
- Where is the least sunniest region?
- What kind of patterns and features can be found?

Next steps might be monthly or seasonal climatological means. Explore the possibilities!

You can change the projection or color scale.