# **Snow Monitoring from Space**

Overcoming the limitations of in-situ measurements by accessing satellite-based near-real-time (NRT) and historical data of snow.



### **BENEFITS**

The impact of snow continues to rise in importance as sustainable energy resource for hydropower facilities, drinking water resource in hot summers, flood parameter for water management, or parameter for insurances. Satellite-derived data become an invaluable information source to:

- + Cover **large remote areas** independent of th reachability
- + Monitor snow in **near-real-time** on a daily basis
- Go back in time to create crucial information for trends and to understand impacts of climate change
- With affordable pricing compared to in-situ measurements or lidar flights
- + Independent and cheap data source
- + Easy visualization and direct analysis possible via the eoapp Hypos

## APPLICATIONS

- Hydropower Capacity planning
- Energy Trading Price development
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- Insurances Independent source
- Drinking Water Availability of water stored in snow



Water management Identify trends, alert system

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Weather services Improvement of meteorological services









Alps, March 2023: Snow depth/ SD (left) and snow water equivalent/ SWE (right)

Data Source: Copernicus, Snowcap, EOMAP



**Baseline** Go back in time for up to 40 years

#### **Historical analysis**

- + Understand seasonality
- + Assess extreme values in long term context
- + Detect trends and natural variability
- + Identify spatial patterns



**Monitoring** Subscription for daily data

#### **Daily analysis**

- + Near-real-time processing of current satellite scenes
- + Fast overview of all areas of interest (AOIs)
- + Statistics and visualization in the dashboard
- + Identify spatial patterns



Alert in combination with Monitoring

#### Direct notifications when thresholds are exceeded

- + Notification via E-Mail
- + Definition of own and site-specific thresholds
- + Combination of different data for early warning indicators









