EO-based products to improve renewable energy forecasts

Recap of the online workshop, 27. Sep 2022, 14:00 - 16:30 CEST
Organising committee

- EUROGI - as an umbrella organisation
- DDGI - Germany: Dr. Benedikt Gräler, 52°North GmbH
- AGEO - Austria: Prof. Dr. Josef Strobl, Uni Salzburg
- SOGI - Switzerland: Maurice Barbieri, Géodétec SA
Agenda of the workshop

14:00  Welcomes
      - EUROGI, DDGI, AGEO, SOGI
      - EARSC, the e-shape project
      - Round of introductions

14:30  Showcase presentations:
      - solar energy nowcasting & short-term forecasting system – nextSENSE
      - Merging offshore wind products
      - Hydropower in snow reservoir – climate service

15:30  Discussion with the showcases

16:15  Questionnaire, Wrap-Up

16:30  Closure
nextSENSE: solar energy nowcasting and forecasting

Speaker: Ilias Fountoulakis
NOA-BEYOND, Greece
Upscaling Sense and developing nextSENSE

- Satellite – Eumetsat data in real time
  - Cloud properties

- Copernicus data in real time
  - Aerosols
  - Trace gases, water vapor

- Radiative transfer simulations

- Cloud Motion vector module

- Solar Radiation in real time
Showcase B: Merging Offshore Wind Products

Merete Badger

DTU Wind and Energy Systems - Technical University of Denmark, Roskilde, Denmark
Mean wind speed at 10 m above m.s.l.

Envisat and Sentinel-1 A/B SAR

ASCAT

Hydrological Forecasting in the Kemijoki Basin

- The most important hydropower production area in Finland

- Spring snowmelt driven inflows account for 55 to 70% of the total annual inflows to reservoirs in the Kemijoki watershed.

- Careful planning and reservoir management schemes before the onset of spring snowmelt essential:
  - Redistribute available resources from spring high inflow periods to other times of the year when demand is higher.
  - Optimal production and enough remaining capacity for safe flood risk management.

- **Information on snow reservoir energy potential is crucial.**
  - Snowpack areal volume.
  - Snowmelt rate and timing.
[Component 1 - 3] HOPS & ML Based Forecasts

HOPS Raw Output

Machine Learning Output

HOPS SWE Assimilation Output
Survey
Slides and material …

… can be found online, at:

https://52north.org/delivery/e-shape_WS/

Thanks to EUROGI and the e-shape project.