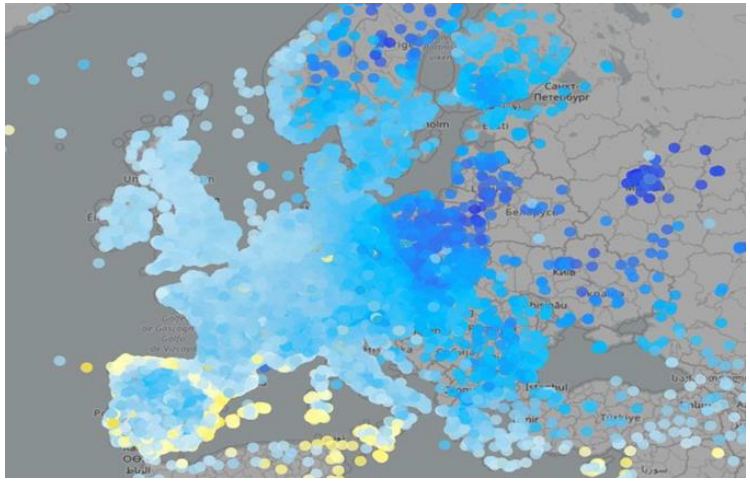
CONSORTIUM FOR SMALL SCALE MODELING

COSMO

Priority Task: EPOCS (Evaluate Personal Weather Station and Opportunistic Sensor Data CrowdSourcing)



IMGW-PIB: Joanna Linkowska, Jan Szturc, Anna Jurczyk, Katarzyna Ośródka, Marcin Grzelczyk, +Radosław Droździoł
CIMA: Massimo Milelli, Elena Oberto
CNMCA: Francesco Sudati

26.04.2023

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IMGW

METEO IMGW-PIB meteo.imgw.pl

CNMCA

PROTEZIONE CIVILE
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Dipartimento della Protezione Civile

COSMO PT EPOCS

- PT EPOCS accepted by WG5/SMC, final approval by STC
- Participants, COSMO Partners: IMGW-PIB, CIMA, CNMCA
- PT Leader: Joanna Linkowska (IMGW-PIB)
- Starts: early Spring 2023, duration 1 year

Total FTEs: early Spring 2023 – end February 2024

Task	IMGW-PIB	CIMA	CNMCA
0	0.05		
1	0.2	0.07	0.15
2	0.2	0.08	
3	0.2		
4	0.05		
Total FTEs	0.7	0.15	0.15

COSMO PT EPOCS Tasks

1. PWS databases survey and exploitation

2. QC algorithms for precipitation

3. Analysis of PWS based gridded rainfall products

4. Suggestions for the follow up activities

COSMO PT EPOCS Tasks

1. PWS databases survey and exploitation

1.1 Comprehensive survey of available data platforms at the European and Global level

Participants: Marcin Grzelczyk, Massimo Milelli, Francesco Sudati

1.2 Testing the process of collection of a real-time PWS data (from IMGW-PIB employees that are using their own stations) by starting new internal database server.

Participants: Marcin Grzelczyk

COSMO PT EPOCS Tasks

1. PWS databases survey and exploitation

1.3 Testing integrity and correctness of stored data,
assess usefulness of external databases/projects (CENAGIS)

Participants: Marcin Grzelczyk

1.4 Analysis of the mobile PWS sensors: testing QC proprieties of a new mobile weather sensors from Meteotracker: https://meteotracker.com

Participants: Francesco Sudati, Massimo Milelli

2. **QC algorithms for precipitation**

2.1 Development and testing automatic QC methods based on the RainGaugeQC algorithms developed at IMGW-PIB.

Participants: Katarzyna Ośródka, Jan Szturc, Anna Jurczyk

2.2 Testing and application of the open-source software package TITAN (www.github.com/metno/titan) for a quality control of ground data.

Participants: Elena Oberto

3. **Analysis of PWS based gridded rainfall products**

3.1 Processing different rainfall data sources (private rain gauges, commercial microwave links, sewer/water service stations, etc.)

Combine PWS with other standard data (telemetry, radar, satellite) into new enhanced rainfall estimates (RainGRS+)
Participants: Anna Jurczyk, Jan Szturc, Katarzyna Ośródka

3.2 Reliability analysis of a gridded RainGRS+ high-resolution estimates of precipitation.

Sample data of RAINGRS+ and RAINGRS (without PWS) fields will be verified against chosen independent precipitation data.
Participants: Joanna Linkowska

4. Suggestions for the follow up activities

- Planning a collaboration for a longer Priority Project (PP)

- Assessment for application of project results in supporting other COSMO R&D activities.

  - forecast verification,
  - data assimilation of NWP/Nowcasting models,
  - postprocessing (machine learning), etc.

- Scientific analysis of the local data variability/density distribution of PWS based precipitation monitoring extreme events (R.

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Thank you

CIMA (Centro Internazionale in Monitoraggio Ambientale) Research Foundation

CNMCA (Centro Nazionale di Meteorologia e Climatologia Aeronautica) - Italian Air Force Weather Service

IMGW-PIB (Instytut Meteorologii i Gospodarki Wodnej – Państwowy Instytut Badawczy) – Polish Weather Services

CNMCA

Virtute siderum tenus

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