Status of the C-SRNWP module of EUMETNET

Balázs Szintai

C-SRNWP Manager

… with contributions form many of you

1st ACCORD All Staff Workshop
Online
12 April 2021
C-SRNWP Module of EUMETNET

- Coordination of Short Range Numerical Weather Prediction in Europe
- In the NWP Cooperation Programme
- 28 Member States, 2 Cooperating States
- New Members: Germany, Ireland
- Module Manager: 0.3 FTE
- Coordinating Member: Hungary
C-SRNWP Expert Teams

To foster communication between Limited Area NWP groups in Europe

8 C-SRNWP Topical Expert Teams (ETs)

- Data Assimilation (chair: Bruce Macpherson)
- Diagnostics and verification (chair: Marion Mittermaier)
- Dynamics and lateral boundary coupling
- Link with applications (chair: Jeanette Onvlee)
- Physical parameterisation (upper air) (chair: Mike Bush)
- Predictability and EPS (chair: Chiara Marsigli)
- Surface and soil processes (chair: Patrick Samuelsson)
- System aspects

Advisory Expert Team (AET):

- Heads of NWP consortia
- C-SRNWP Topical ET Chairs
- Observers: FCAM, Post-processing MM, SRNWP-EPS MM

Core Members:

<table>
<thead>
<tr>
<th>ALADIN</th>
<th>COSMO</th>
<th>HIRLAM</th>
<th>MetOffice</th>
<th>RC LACE</th>
<th>SRNWP-EPS</th>
<th>Core Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data assimilation and use of observations</td>
<td>Claude Fauchere</td>
<td>Christoph Schlaff</td>
<td>Roger Rasmussen</td>
<td>Bruce Mackinven</td>
<td>Bruce Macpherson</td>
<td>Layers</td>
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<tr>
<td>Diagnostics, validation and verification</td>
<td>Bogdan Bockelk</td>
<td>Peter Gabs</td>
<td>Bert Hansen</td>
<td>Martina Mittermaier</td>
<td>Christoph Zaner</td>
<td>Michael McCann</td>
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<td>Dynamics and lateral boundary coupling</td>
<td>Per Tormena</td>
<td>Michael Baldauf</td>
<td>Sandra Tjernlund</td>
<td>Ben Shearin</td>
<td>Peter Svensson</td>
<td>Michael Diamantakos</td>
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<td>Link with applications</td>
<td>Maria Menabde</td>
<td>Alexander Beutel</td>
<td>Janette Onvlee</td>
<td>Simon Jackson</td>
<td>Bruce Knaus</td>
<td>Benjajd Convoli</td>
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<td>Physical parameterisation (lower air)</td>
<td>Yuan Zeng</td>
<td>Matthias Kneifel</td>
<td>Sandra Tjernlund</td>
<td>Mike Stohl</td>
<td>Nova Proctor</td>
<td>Iron Smit</td>
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<td>Predictability and EPS</td>
<td>Gren Stenz</td>
<td>Christian Himig</td>
<td>Georg Lieb</td>
<td>Annette Proctor</td>
<td>Andrew Persson</td>
<td>Martin Britton</td>
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<tr>
<td>Surface and soil processes (mixed and data assimilation)</td>
<td>Patrick Le Moigne</td>
<td>Jean-Marc Bertaux</td>
<td>Patrick Samulsson</td>
<td>Marta Bertozzi</td>
<td>Alina Topoki</td>
<td>Comsa Ioana Patricia de Roucy</td>
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<td>System aspects</td>
<td>Ryszard Khatib</td>
<td>Manuel Mitre</td>
<td>Daniel Sanner</td>
<td>Richard Gille</td>
<td>Olaf Spieck</td>
<td>Janny Roeder</td>
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Additional Members:

- Link with applications | Frank Gofs | Per Uldes | Mike Bush | Marion Tudor | Stephanie Sauron |
- Physical parameterisation (upper air) | Debra Menon | Fernando Mora | Berti Hansen | Jan Meldt |
- Predictability and EPS | Francisco Braccini | Allan Joly | Andre Wolski | Christian Gofkitch | Jan Batut | Jan Meldt | Jan Meldt |
- Surface and soil processes (mixed and data assimilation) | Raffi Hanafi | Nogen Siemonsen | Jan-Peter Scholz | Liviana Krasnov | Benigna Gueret | Jan-Cobelt | Beatrice Stuata |
- System aspects | Anders Bogdanski | Ulrich Schiesser | Ulf Andresen | Nils-Erik Vold | Martin Tudor |
EWGLAM/SRNWP Annual Meeting

2019:
• Paper published in Atmospheric Science Letters

2020:
• 28 September – 1 October 2020, online (BlueJeans)
• 166 registered participants from 33 countries (peak attendance ~140)
• Special topic: external databases in NWP
• Parallel sessions organized by C-SRNWP Expert Teams
• Invited experts: ECMWF, ESA, NOAA, NCAR

2021:
• 27-30 September 2021, Brussels, Belgium (or online, or hybrid…)
• Local host institute: RMI
• Special topic: Application of machine learning to actual problems in NWP
• Invited experts could be proposed by any ET
Cooperation with Obs CA (Obs-SET)

- **Participation at Obs-SET Meetings**

- **December 2020: web-meetings on the definition of two planned obs impact studies**
  - AMDAR vs. Mode-S
  - AMDAR-humidity

- **Spring 2021: SoWs issued**
  - AMDAR vs. Mode-S
  - Personal Weather Stations QC tools

- **12 January 2021: web-meeting of C-SRNWP ETDA and ETVERIF to give recommendations on the evaluation of impact studies → written recommendation at the end of January**
  - Methods for the validation of the assimilation cycle
  - Methods for the verification of forecasts
  - Design of impact studies

### Budget for Action 3: Observation Impact Studies (k€)

<table>
<thead>
<tr>
<th>Description</th>
<th>2020 k€</th>
<th>2021 k€</th>
<th>2022 k€</th>
<th>2023 k€</th>
<th>Total k€</th>
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<td>A3.02 MODE-S versus AMDAR impact study</td>
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<td>A3.03 Impact study of VAD/VVP versus E-AMDAR wind at airports</td>
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<td>A3.04 AMDAR humidity value for airlines</td>
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<td>A3.05 Impact study of AMDAR humidity versus radiosonde at airports</td>
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<td>CANCELED?</td>
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<td>A3.06 AMDAR humidity value for LAM and forecasting service</td>
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<td>A3.07 Privately-owned Weather Station Observation impact study</td>
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<td>A3.12 Placeholder for crowdsourcing</td>
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<td>A3.10 Impact study on additional GNSS products (e.g. Slant delay)</td>
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<td>A3.11 Impact study on MWR brightness temperature</td>
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*New plan*

*Plan approved at STAC19*
Decrease in aircraft based obs.

- Due to COVID-19 situation, there was a reduction of 80% in AMDAR reports over Europe in April 2020

- Coordinated effort was made by EUMETNET Members to increase radiosoundings (at 06 and 18 UTC) in summer 2020

- New Mode-S data was quickly made available by EMADDC
SRNWP Data Pool of surface observations

• Database of surface and boundary layer observations → validation of PBL and land surface models
• Freely available for EUMETNET Members and collaborating universities
• Important in-kind contribution from DWD (collecting the data) and HNMS (web-site)

Statistics for Sept 2019 – Aug 2020:
• 2 new users
• 15 monthly files downloaded

Website: http://srnwp.cosmo-model.org/content/default.htm
Account request: http://srnwp.cosmo-model.org/content/register.htm
Global Lake Database

- Database of lake location and depth
- Important input for NWP models running a lake parameterization
- In the past ~10 years: work financed by different LAM consortia
- Financial support of EUMETNET since 2017: 8500 EUR/year (for maintenance and development) → since 2019 included in the C-SRNWP budget
- Work coordinated by FMI (Ekaterina Kurzeneva), person involved: Georgy Kurzenev
- Currently ongoing work:
  - Two land-water datasets are currently under processing for the new fine resolution version of GLDB: (i) ECOCLIMAP SG as a preliminary map and (ii) the new map based on Joint Research Centre (JRC) Global Surface Water (GSW) dataset as a final map.
  - Both ECOCLIMAP SG and JRC GSW - based dataset contain errors of mis-classification between inland water and sea water (river estuaries, coastal lagoons, etc.). The algorithm to treat these errors exists (see e.g. C. Fortelius et al., 2020, p. 47), but it should be adapted for the specific task, for a specific map resolution and applied globally. Georgy Kurzenev is currently working on that, using ECOCLIMAP SG as a prototype.
  - Finally, after correcting all mis-classification errors, the lake depth will be mapped on the JRC GSW - based dataset by Georgy.
Physiography related work

• **Goal**: checking and correction of ESA-CCI land cover map for NWP purposes
• **Budget**: 27.000 EUR for three years: 2021-2023 (money not spent in other C-SRNWP tasks)

• **Supervisory team defined on 24 February**:
  - C-SRNWP Surface ET Chair: Patrick Samuelsson (SMHI)
  - NWP expert: Ekaterina Kurzeneva (FMI)
  - GIS expert: Bolli Pálmason (IMO)

• **Successful application**: Sandro Oswald (ZAMG) on 24 March

• **Kick-off meeting planned** (within Surface ET) in near future
EMS Annual Meeting

- 6-10 September 2021, online event

- OSA Session: Challenges in Weather and Climate Modelling: from model development via verification to operational perspectives

- Conveners: Estíbaliz Gascón, Daniel Reinert, Balázs Szintai

- Co-conveners: Emily Gleeson, Chiara Marsigli, Guy de Morsier, Manfred Dorninger

- Sub-session about EUMETNET, C-SRNWP and related activities

- Abstract submission deadline: 16 April
Short Term Scientific Missions

- New element in the C-SRNWP module
- NWP consortia have the funds to support internal exchange, however, this is usually not applicable for travel outside the consortia
- Yearly 1-2 missions (2000 EUR/year) will be funded to deal with cross-consortia issues (either technical or scientific).
- A typical stay would last 1-2 weeks and participation of young scientist is encouraged.
- Shared funding (EUMETNET/sending-host institute) is very welcome.

- Application form have been prepared and sent to Contact Points and consortia PMs
- Two collection dates per year: 1st March, 1st September
- Decision to be taken by AET
- 2019 autumn: Martin Imrisek (SHMU) work on GNSS STD assimilation (ALADIN-LACE-HIRLAM) at KNMI for four weeks (shared funding with LACE)

- 2020: no travels due to COVID, funds carried forward to 2021
Thank you for your attention!
CONTACT DETAILS

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