

COST Action ES1004 EuMetChem Expert Group Scientific Meeting and Working Meeting

6 April 2011 Vienna, Austria (EGU 2011)

Scientific meeting of COST ES1004 Action was coordinated with the EGU-2011 special session dedicated to the development of the on-line interactive models – “Integrated physical and chemical weather modelling with two-way interactions” (AS4.25), see the Session and Meeting programs on: <http://meetingorganizer.copernicus.org/EGU2011/session/7498>.

The program of the EGU AS4.25 Session and EuMetChem Scientific Meeting is enclosed in a separate document. All the presentations (pdf) will be available on the web-site: eumetchem.info.

Notes from the COST Action ES1004 EuMetChem Working Meeting (by invitation only), prepared by Joanna Struzewska, are included below.

1) Chair of the Action – Alexander Baklanov (DMI) presented current status of the Action

- Action was launched on 28th of February
- Chair and two deputy chairs (Heinke Schlunzen, University Hamburg and Sylvain Joffre, FMI) were elected during the kick-off meeting
- Leaders/co-leaders of WGs (at least for WG initiation) were elected at the kick-off meeting (WG1 – Peter Suppan/ Jose Baldasano, WG2 – Michael Gauss, WG3 – Christian Seigneur, and WG4 – Heinke Schlunzen/ Dominik Brunner)
- 17 countries signed the MoU.
- 5 non-COST countries sent applications to join the Action
- 33 MC members were nominated
- Cooperation is planned with international institutions ECMWF, JRC, WMO
- Four working groups were established. However, according to decisions taken at the kick-off meeting the activities will not be split between WGs during the first year.
- WGs should be formed and a detailed work plan will be established for each WG. The common task for the initial stage is to prepare the overview of integrated models used/developed in Europe

2) Working group leaders presented the overview of WGs

(see the presentations on the web-site)

2.1) WG1 - Strategy and framework for on-line integrated modelling

Peter Suppan presented objectives of WG1. These are:

- effective code implementation
- code management strategies
- identification of development priorities

The following tasks will be undertaken:

- summary of existing on-line coupled models and ESM
- main processes in implementation of direct and indirect aerosol effect
- requirements for on-line systems

- building guidelines for on-line coupling
- development of code implementation strategies

Key deliverables include:

- overview of modelling systems
- recommendations for module implementation in the interactive modelling systems
- guidelines for interactive modelling system

Peter Suppan underlined the role of Jose Baltasano in leading WG1. Jose Baltasano suggested that the Action could join the scientific program offered by European computer centres. The purpose would be the rewriting the models' code for new architecture of supercomputers to enhance the computational speed. After the discussion Alexander Baklanov supported it and concluded that such an opportunity should be open for groups, but the tasks undertaken in the frame of the Action should not be only technical.

Alexander Baklanov pointed out the need for common platform for testing of the new modules.

2.2) WG2 - Interactions, parametrizations and feedback mechanisms

Michael Gauss presented objectives of WG2

Objectives of WG2 are built around the importance of feedback mechanisms in the atmospheric models. The main goal is to establish the state-of-the-science in the parameterizations of meteorology-chemistry interactions. Michael Gauss underlined that the modelling of the direct and semi-direct feedback is relatively well established while parameterization of the indirect effect is still challenging. Another issue in WG2 is the assessment of feedbacks' algorithms in terms of computational efficiency.

The focus on operational forecasting systems and policy support applications has been underlined.

Deliverables are:

- recommendations for short-term development goals
- recommendations for observations and field experiments for module validation

As the scope of WG2 covers exchanging modules and interfacing feedbacks, Alexander Baklanov raised the problem of the possible overlap with WG1 activities. There might be further overlaps if new COST action on regional climate modelling proposed by Ranjeet S. Sokhi is accepted. The need of cooperation with climate modelling community has been underlined.

2.3) WG3 - Chemical data assimilation

As the leader of WG3 - Christian Seigneur - did not attend the meeting, Alexander Baklanov presented the scope of WG3. The main objective of WG3 is to overview the framework for chemical data assimilation in terms of further developments.

The focus will be on aerosol the assimilation.

Alexander Baklanov commented that although chemical data assimilation can not be treated as a pure problem of feedbacks, it gives an opportunity for model enhancement and improvement of the

forecast skill score.

2.4) WG4 - Evaluation, validation and applications

Dominik Brunner (replacing Heinke Schlunzen) presented short objectives of WG4. The main goal is to develop tools and methodologies for evaluation of integrated models. The starting point for this activity will be the outcome from COST 728. Methodologies elaborated in the frame of COST 728 will be revised and further developed with a focus on integrated models' needs.

Four types of evaluation methodologies were mentioned: operational / diagnostic / dynamic / probabilistic. Also, evaluation measures for different time scales were discussed.

The major deliverable of WG4 will be recommendations for validation of coupled modelling systems. The lack of standard approach in air quality model validation/evaluation was raised – most of the studies focus on specific short term episodes.

3) Alexander Baklanov summarized the meeting:

- Next Management Committee meeting will take place October. The venue has not been decided (suggestions: joint with EMS conference in Berlin or in Copenhagen at DMI)
- Start work on the paper on the overview of existing coupled system (bullets with structure will be sent soon)
- To proceed with the first year tasks working groups should be structured
- It was also agreed that additionally to the WG leaders each WG will be advised/co-lead by our US collaborators: WG1: Gerg Grell (NOAA), WG2: Yang Zhang (NCSU), WG3: Greg Carmichael (University of Iowa), WG4: S.T. Rao (US EPA). All 4 of them participated in the meeting and agreed with this.
- Expressions of Commitment should be delivered by all MC members and external participants (if not delivered yet)
- According to COST rules there can be only two nominated MC members from each country, there is no limitation on the number of experts.
- The Action web page is available at: eumetchem.info – contributions are requested. Alexander Baklanov considered uploading the presentations from the expert meeting/session at EGU 2011 and all the participants agreed.
- Application deadline for the summer school "Integrated Modelling of Meteorological and Chemical Transport Processes / Impact of Chemical Weather on Numerical Weather Prediction and Climate Modelling" (<http://www.ysss.osenu.org.ua>) in Odessa is end of April, 2011.
- Alexander Baklanov will contact leaders of projects related to COST ES1004 Action

No decisions were made by Management Committee.