

COST Action ES1404

Report of the WG3 meeting with Special Cold Lake Session during the workshop on “Parameterization of Lakes in Numerical Weather Prediction and Climate Modelling”

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Évora, Portugal, May, 8, 2015

The working group “Snow data assimilation and validation methods for NWP and hydrological models” (WG3) used the workshop on “Parameterization of Lakes in Numerical Weather Prediction and Climate Modelling” for a technical meeting and presentations in the framework of the session on “Cold Lakes”. The support of several workshop participants by the COST Action ES1404 and the hosting of the WG3 meeting by the University of Évora is gratefully acknowledged.

For the discussion in the working group meeting, 10 scientists could be welcomed. Jürgen Helmert (DWD, Germany), Laura Rontu (FMI, Finland), Ekaterina Kurzeneva (FMI, Finland), Patrick Le Moigne (CNRM/GAME, France), Elena Shevnina (FMI/Russian State Hydrometeorological University, Russia), Bin Cheng (FMI, Finland), Arkady Terzhevik (Russian Academy of Sciences, Russia), Sergey Golosov (Institute of Limnology in St. Petersburg, Russia), Homa Khyrollah Pour (University of Waterloo, Canada), and Dmitrii Mironov (DWD, Germany) participated.

The technical meeting started with a discussion of the items in the questionnaires on snow observations and snow data assimilation. The preparation of the questionnaires was decided during the Management Committee and Working Group Meeting for WG3 in Grenoble, March, 18-20, 2015. The corresponding tasks of the working group are

- Overview of the various snow observations used in NWP, hydrology and climate studies for different purposes including validation and data assimilation (e.g. different snow observations are used in different environmental applications).

- For data assimilation, different methods are used in NWP and hydrology. The overview will allow to assess the current situation and to understand future perspectives.

The main decision in Évora was to merge the two questionnaires into one on “snow data assimilation and snow observations” due to the recognized significant overlap between both documents. Recommendations for the improvement of the questionnaire have been given. Former WMO surveys should be considered (e.g., Nitu and Wong, 2010), more examples for possible answers should exist. These proposals will be considered in the final version of the document that will then sent to the COST Action members for distribution to intended recipients.

The discussion was followed by six presentations in the session on “Cold Lakes” which are summarized in the workshop report (Kurzeneva et al., 2015) and an ECMWF research department mission report (Balsamo, 2015).

- Jürgen Helmert: “Objectives and Tasks of the WG3”
- Laura Rontu: “Lessons of SNAPS Snow and avalanche applications March 2011-February 2014”
- Bin Cheng: “Analyses snow and ice thickness from high resolution thermistor temperature profiles”
- Homa Kheyrollah Pour: “Winter-time Remotely-sensed Monitoring of Lake Ice-North Hydrology ESA-STSE Project”
- Arkady Terzhevik: “Snow and ice cover on a shallow boreal lake: The effect on in-water processes”
- Sergei Golosov: “Snow and ice cover on a shallow boreal lake: The effect on in-water processes - Chemical and biological features of the bottom boundary layer formation in ice covered lakes”

References

- Nitu R. and Wong K., 2010, CIMO Survey on National Summaries of Methods and Instruments for Solid Precipitation Measurements at Automatic Weather Stations, WMO/TD-No. 1544.
- Balsamo, G., 2015, ECMWF research department mission report, ECMWF, RD15-148
- Kurzeneva, E., Salgado, R., Mironov, D., Terzhevik, A., Potes, M., Monteiro, M. J., Balsamo, G., and Rontu, L., 2015, Summary of the 4th Workshop “Parameterization of Lakes in Numerical Weather Prediction and Climate Modelling” co-organized with the WG3 meeting of COST Action ES1404 “A European Network for a harmonized monitoring of snow for the benefit of climate change scenarios, hydrology and Numerical

Weather Prediction”, University of Évora, Évora, Portugal, 7-9 May 2015, available on
<http://www.lake15.cge.uevora.pt/>