Summary of SRNWP Surface side meeting, October 3rd, 2017

The SRNWP Surface Expert Team documents are available here:
https://drive.google.com/drive/folders/0ByZGvMfZkeRIUUYtaS03a01LSlE?usp=sharing

Margarita Choulga (currently at ECMWF) gave us an update on her work on the Global Lake Data Base (GLDB). All areas, globally, do no have defined lake depths based on geological information (if specific lake depth is missing). New version will be released when license issues are solved.

We shared information on status and plans for surface in our NWP systems. E.g.:

- Surface data assimilation and spatialisation of observations.
- Subgrid orographic roughness/drag.
- Subgrid information for triggering of convection.
- Prognostic LAI
- Modelling of urban areas

This sharing of information confirmed that it is valuable to do this in a more organised way by updating already existing tables:
http://www.cnrm-game-meteo.fr/aladin/spip.php?rubrique42

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We had some more philosophical discussions on eventual long term development needs for surface-atmosphere coupling. State of the art NWP land-surface models

i. are often based on the tiling approach where the tiles are independent of each other.
   The tiling approach is foreseen to be valuable as long as physiography is provided at a higher resolution than the grid resolution.

ii. the lowest atmospheric level is considered as the upper boundary condition for the surface layers for prognostic variables, fluxes and diagnostic quantities
   Enforcing homogeneous conditions just a few meters above a heterogeneous surface may lead to unforeseen consequences..

iii. the Monin-Obukov similarity theory is used for the surface layer
   Less good approximation when resolution is increasing

iv. the horizontal resolution is the same throughout the atmospheric column.
   Efficiency wise we should apply high horizontal resolution when motivated by dominating processes. Otherwise less resolution can be applied. But such grids/parametrisations still belong to very long term development…

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Other aspects:

Relationship between the SRNWP Surface Data Pool and the Fluxnet data site: Not totally clear…

Shared development of observational operators through version control systems. E.g. CMEM by ECMWF

Circulate draft agenda for next year's meetings among all EWGLAM/SRNWP participants.

We confirmed that we always need to apply physiography data with a critical eye.