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Status and progress in Global Lake Database developments

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With increasing computation powers resolution of model atmospheric grids becomes finer. Now for successful numerical weather prediction (NWP) and local climate modelling it is vital to take into account even surface sub-grid features, such as lakes and reservoirs (inland water). Inland water bodies participate in heat and moisture exchange, change vertical and horizontal fields of wind, 2 meter temperature and humidity, affect amount of precipitation and its spatial distribution, and therefore can influence local weather and climate. All lake parametrization schemes use lake depth (bathymetry or mean depth at least) as main external parameter. Global Lake DataBase (GLDB) is developed specially for this purpose and is used already by many consortiums for research, NWP and climate modelling as global gridded lake mean depth map. In addition, GLDB has lists of individual fresh, saline, caldera and man-made lakes with lake location, mean and maximal depth and lake water surface area. Lists can be also used in research to ameliorate the quality of the weather forecast. Improvement of GLDB and its constant update with new in-situ observations, new indirect estimates is critical for GLDB users and their products made with use of GLDB. The update of GLDB with new lake depth data will make it possible to better understand the features of interaction between lakes and the boundary layer of the atmosphere in different regions.
With EUMETNET support GLDB is updated with new in-situ measurements from global databases of reservoirs (GRanD) and lakes (Limnology institute database), as well from several newly available national inland water datasets. Difficulties that were faced during this process and verification results will be presented.