



History and actual status of Global Lake Database

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The surface heat, moisture and momentum fluxes depend not only on atmospheric conditions but also on the properties of the land cover, which in lake-rich areas are largely determined by inland water bodies (rivers, lakes). Lakes influence the local weather conditions and local climate. For example, during freezing and melting the lake surface radiative and conductive properties as well as the latent and sensible heat released from lakes to the atmosphere change dramatically, leading to a completely different surface energy balance. By affecting the surface fluxes, lakes modify the structure of the atmospheric boundary layer. In addition, they can intensify winter snowstorms, increase precipitation or/and surface temperature. Also, lakes generate night convection and intensive thunderstorms, which on the lake Victoria for instance, lead to a death of thousands fisherman every year. For the parametrization of lakes in numerical weather prediction (NWP) and climate models, the information about lakes characteristics as external model parameters is necessary. The most important one, used by all lake parametrization schemes is lake depth. The global coverage of depth data is essential. For this purpose the global database of lake depth GLDB was developed. It is a global lake mean depth gridded map created by using several sources of information as lake location, mean depth in-situ observations from nation databases, bathymetry data from digitized navigation maps, and mean depth indirect estimates that are based on lake geological origin. GLDB evolution from the start (version 0) till the latest available version, its constant needs and further plans of GLDB developments will be presented.