



## **Hydrological Balance of High Mountainous Lake on Karstified Plateau of Julian Alps - Slovenia**

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High mountainous lake Jezero na Planini pri Jezeru is located in the Triglav National Park at the Julian Alps in Slovenia. It fills a depression covered with Pleistocene fine-grained sediments and glacial till on intensively karstified plateau. In the past many investigations were performed on the lake and its surrounding without knowledge about hydrological balance. The goal of the present study is to fill this gap.

Hydrological water balance model of the discussed area was constructed based on results of hydrogeological mapping, soil analyses, infiltration capacity measurements with unsaturated hydraulic parameter analyses, and hydrological modelling. Modelling for soil water balance in the lake catchment area was done with analytical computer program Visual HELP. Free-water-surface evaporation and lake storage calculations were based on other analytical models. A number of different scenarios of possible catchment areas were studied in order to describe the amount of water circulation in the open system of the lake.

Scenario that implies that the catchment area is bounded to the nearest vicinity of the lake was proved to be the most realistic. Using the water balance, the paper shows that mountainous lake formed on small accumulation of low permeable sediments on highly permeable and karstified limestone can be self-efficient as precipitation on the lake surface and, moreover, surface runoff from the nearest slopes are sufficient to sustain its volume.