

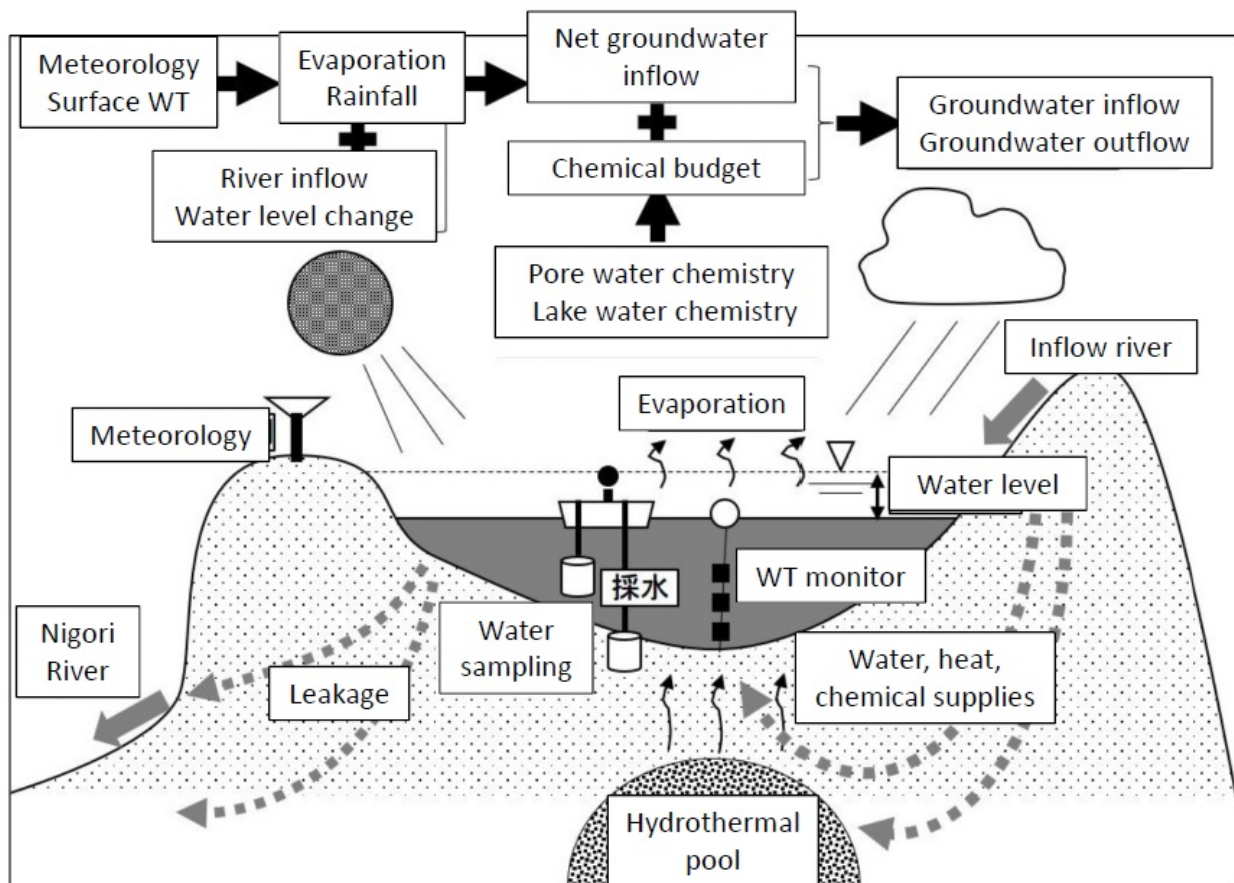
Estimates of hydrological, thermal and chemical budgets of Okama Crater Lake, Zao Volcano, Japan: A preliminary study

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In order to clarify a groundwater flow system below Zao Volcano, hydrological, thermal and chemical budgets of a crater lake, Okama, are estimated (see the schematic diagram). Since June 2019, profilings on a boat and meteorological observations at lake shore have been carried out. Also, using a mooring system, seven temperature loggers were vertically fixed at the deepest point to obtain thermal storage changes of Okama. This is a preliminary report about approaches for the estimates and some observational results in June - October 2019. Okama is at 1550 m asl with ca. 26 m at maximum depth and pH=3.2-3.7. The Okama water leaks into the Nigori River as groundwater, which could affect the ecosystem in the downstream region. In October 2019, Typhoon No. 19 attacked the lake with a rainfall of 396 mm per 15 hr. The heavy rainfall produced high sediment load into the lake, and formed the sedimentary delta at lake shore. Thereby, the infilling of the lake was probably proceeded.

Keywords: Okama Crater Lake, hydrological budget, chemical budget, thermal budget, groundwater flow system



Schematic of hydrological, thermal and chemical budgets in Okama Crater Lake.