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Study on Water Level Change of Yamzhog Yumco Lake in south Tibet

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The YamzhogYumco Lake in south Tibet is one of the largest closed inland lakes on the Tibet Plateau. Water level monitoring data during 1974-2012 show that the lake level change has experienced 5 stages. From 1974 to 1977, the lake level showed a declining trend with an average rate of -0.26m/yr; from 1977 to 1980, the lake level showed a rising trend with rate of 0.37m/yr; after 1980, the lake level kept a declining trend for 16 years with rate of -0.25m/yr; from 1996 to 2004, the lake level showed a rising trend again with rate of 0.28m/yr; and after that, the lake level declined rapidly with a rate of 0.5m/yr. The snowmelt and runoff of three river catchments within the YamzhogYumco Lake watershed was simulated using an altitude zone based temperature-index model, calibrating the snow cover area and runoff to the MODIS snow cover data and runoff observation data, respectively. As a result, we studied the potential factors that might cause the lake water level changes by comparing the hydrometeorological data from the surrounding stations and the simulated runoff in the whole watershed with the observed lake water level changes via multivariate regression analysis.