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# Assesment of the relationship between land use ,climate and surface water quality in Hangzhou, China

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Many natural and human factors have great effect on water quality. The mainstream's Water quality of Qiangtang River,especially the one which lies in Hang zhou city ,is threatened by extensive development of land uses .Additionally,the water quality in this region is influenced by climate such as temperature and rainfall. Water quality datas which include ammonia nitrogen,dissolved oxygen(DO),BOD,total phosphorus(TP) are measured are assessed to ascertain the quantitative relationship between water quality parameter and the factors above based on GIS and statistical method.The results indicate that higher percentage of agricultural and urban lands produce higher level of pollutants.However, the forested areas are negatively correlated the the level of pollutants.Besides,$r^2$ is higher in regression equation between land use in the riparian zone and water quality than that between the whole region and water quality. From the rearch,as temperature rises ,all the measured variables increase except DO. Eutrophication event every year of the river in Hangzhou is highly related with high temperature.But as the rainfall increases,the water quality will get better.However,in general it seems that the effect of temperature and rainfall on water quality is not as evident as land use doesvery much.Maybe it is because land use's contribution is superor to climate.This is worth further investigated.