

## **Exploring the Relationship Between the Variation of Land Use As Well As Water System —A Case Study of Yuhang, Hangzhou**

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### **Abstract**

This study adopts a correlation approach to quantitatively analyze the relationships between land use and water system, taking Yuhang District of Hangzhou as the research scope. In this regard, the variation of land use in the study area was firstly produced using the Supervised Classification method. From 2000 to 2015, the construction land area increased rapidly, and the area of forest land as well as the cultivated land reduced. Then, the water system maps of the study area in different years were separated from the remote sensing images. The relevant data of water system was obtained by using ArcGIS. The phenomenon concerning with complicate water system transfer to a simple one had become more and more obvious from 2000 to 2015. SPSS was used to select excel table for correlation analysis between the data of land use and water system. Next regression models were established, using the relevant data of water system as the dependent variable and the related data of land use as the independent variable. According to the results, there is a correlation between the variation of land use and water system. The impact of variation in cultivated land on water system is more significant comparing with construction land. The variation of forest land has little effect on water system. Water-related environmental problems have become the main problems which threaten the sustainable development of cities in recent years. The variation of land use changes the original water system structure of the region, which is an important incentive for urban water-related environmental problems. The impact of the analysis of the driving factors of structural changes in the water system has important guiding significance for the prevention and reduction of water-related environmental problems.