

# 도시지역 침수예측을 위한 유역특성과 한계강우량에 대한 상관분석

## Correlation Analysis of Basin Characteristics and Limit Rainfall for Inundation Forecasting in Urban Area

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### Abstract

Flooding in urban areas is caused by heavy rains for a short period of time and drains within 1 to 2 hours. It is also characterized by a small flooding area. In addition, flooding is often caused by various and complex causes such as land use, basin slope, pipe, street inlet, drainage pumping station, making it difficult to predict flooding.

Therefore, this study analyzes the effect of each basin characteristic on the occurrence of flooding in urban areas by correlating various basin characteristics, whether or not flooding occurred, and rainfall(Limit Rainfall), and intends to use the data for urban flood prediction.

As a result of analyzing the relationship between the imperviousness and the urban slope, pipe, threshold rainfall and limit rainfall, the pipe showed a correlation coefficient of 0.32, and the remaining factors showed low correlation. However, the multiple correlation analysis showed the correlation coefficient about 0.81 - 0.96 depending on the combination, indicating that the correlation was relatively high. In the future, I will further analyze various urban characteristics data, such as area by land use, average watershed elevation, river and coastal proximity, and further analyze the relationship between flooding occurrence and urban characteristics.

The relationship between the urban characteristics, the occurrence of flooding and the limiting rainfall amount suggested in this study is expected to be used as basic data for the study to predict urban flooding in the future.

*Key words:* Urban Flood, Limit rainfall, Basin characteristics, Correlation Analysis

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