Introduction of smart urban flood forecasting technology based on X-band small radar network

WANSIK YU[*1], HYOSOK CHAE[1], EUIHO HWANG[1], DAESUN KIM[1]

[1]*K-water Research Institute*

(a) Purpose of study or research hypothesis

we introduce smart urban flood forecasting technology which is aimed to develop water disaster response technology through construction and operation of X-band small radar for urban flood management.

(b) Key issue(s) or problem(s) addressed

Recently, the frequency of heavy rainfall is increasing due to the effects of climate change, and heavy rainfall in urban areas has an unexpected and local characteristic. Floods caused by localized heavy rains in urban areas occur rapidly and frequently, so that life and property damage is also increasing. It is crucial how fast and precise observations can be made on successful flood management in urban areas.

(c) Methodology or approach used

WHAP (Water Hazard Information Platform) Project in South Korea is promoting the goal of securing new concept water disaster response technology by linking high resolution hydrological information with rainfall prediction and urban flood model. In this WHAP Project, local rainfall detection and prediction, urban flood prediction and operation technology are being developed based on X-band small radar for observing the local rainfall.

(d) Results or conclusions derived from the project

This study is expected to provide more accurate and detailed urban flood warning system by enabling high-resolution observation of urban areas.

(e) Implications of the project relevant to congress themes

It is necessary to construct a new urban flood forecasting system to minimize urban flood damage by upgrading the urban flood response system and improving observation and forecasting accuracy by quickly observing and predicting the local storm in urban areas.

ACKNOWLEDGEMENTS

This subject is supported by Korea Ministry of Environment(MOE) as “Water Management Research Program (79622)”.

Keywords : Urban flood forecasting, X-band small radar, Urban flood warning system