# Investigation of Inundation Prediction Method Linked with Real-Time Precipitation Information

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## 1. Introduction

In order to guard oneself from an inundation damage, a citizen has to receive precipitation information and judge the need of evacuation by oneself. However, it is difficult for citizens to comprehend a flood risk from precipitation information because the precipitation information actually provided at the time of heavy rainfall doesn't link with a flood hazard map. In this study, I try to develop the inundation prediction map that a citizen can remind the inundation situation easily from the precipitation information and/or heavy rain warning by making the inundation prediction dataset linked with the precipitation information to be provided at the time of a heavy rain.

## 2. Method

The method of this study composes of 4 steps, (1) setting on the precipitation scenarios, (2) runoff / inundation analysis, (3) categorization of the weather information assumed to be issued at each precipitation scenario, (4) making of the inundation prediction map according to weather information and/or precipitation.

In setting on the precipitation scenarios, I set several rain duration (1, 2, 3, 6, 12, 24, 48 hours), and several precipitations on the basis of occurrence probability (1/30, 1/50, 1/100, 1/200). A conventional inundation prediction map often assumes the uniform distribution of precipitation. However, in the case of short-period heavy rain, it is the local rain. Therefore, I set several number of the rainfall area, and increased the rain areas sequentially, 5km∗5km, 10km∗10km, 15km∗15km.

I use Rain-Runoff-Inundation (RRI) model developed in Public Works Research Institute as the method of the inundation prediction.

At each precipitation scenario, I categorize weather information assumed to be issued. The high risk precipitation scenarios is extracted in each subregion according to categorized weather information.

In this presentation, I report the result of case study for basin of Katsura-River.

Keywords: inundation prediction, weather warning, hazard map, evacuation judgement