

Assessment of the paleo-inundation condition under the paleo-environment

○Pingping LUO*Kaoru TAKARA*Bin HE*APIP*Weili DUAN*Maochun HU

Paleo-inundation condition assessment is the study of the historical inundation under the past flood events which occurred prior to direct measurement of hydrologic parameters using modern methods. The ultimate objectives of this study are to (1) estimate paleo-inundation under the extreme floods using historical literature and incomplete data records, and (2) estimate extreme flood events that may occur in the future by combining estimated paleo-floods with systematically recorded floods by using the statistical and modelling methods. This paper focuses on showing an application example for estimating the historical inundation conditions under the paleo-floods using modern technologies such as digitized land use maps, a distributed hydrological model and high-speed computers at the river basin scale. In the future, global climate model (GCM) outputs will be combined with existing modeling tools to estimate potential flood scenarios. Under the potential flood scenarios based on the paleo-flood simulation, we could calculate the future inundation maps and support the important information for the policy makers and research for the extreme events. The result of this research could provide a reasonable proof for improvement of the accuracy in statistical analysis, hydrological modelling of extrem events (heavy rains,

flood, droughts), and forecasting simulation, which are very important in designing strategy and plan for water-related disaster mitigation/prevention.