Geophysical Research Abstracts
Vol. 16, EGU2014-4777-2, 2014
EGU General Assembly 2014
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Flood Risk Assessments of Architectural Heritage - Case of Changgyeonggung Palace

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The risk of natural disasters such as flood and earthquake has increased due to recent extreme weather events. Therefore, the necessity of the risk management system to protect architectural properties, a cultural heritage of humanity, from natural disasters has been consistently felt. The solutions for managing flood risk focusing on architectural heritage are suggested and applied to protect Changgyeonggung Palace, a major palace heritage in Seoul. After the probable rainfall scenario for risk assessment (frequency: 100 years, 200 years, and 500 years) and the scenario of a probable maximum precipitation (PMP) are made and a previous rainfall event (from July 26th to 28th in 2011) is identified, they are used for the model (HEC-HMS, SWMM) to assess flood risk of certain areas covering Changgyeonggung Palace to do flood amount. Such flood amount makes it possible to identify inundation risks based on GIS models to assess flood risk of individual architectural heritage. The results of assessing such risk are used to establish the disaster risk management system that managers of architectural properties can utilize. According to the results of assessing flood risk of Changgyeonggung Palace, inundation occurs near outlets of Changgyeonggung Palace and sections of river channel for all scenarios of flood risk but the inundation risk of major architectural properties was estimated low. The methods for assessing flood risk of architectural heritage proposed in this study and the risk management system for Changgyeonggung Palace using the methods show thorough solutions for flood risk management and the possibility of using the solutions seems high. A comprehensive management system for architectural heritage will be established in the future through the review on diverse factors for disasters.