



## **Change of probability precipitation according to the increase in sea surface temperature**

Tae-Suk Oh (1), Young-II Moon (1), Sun-Kwon Yoon (1), Hyun-Han Kwon (2), and Myeong-Sun Park (1)

(1) Dep. of Civil Engineering, University of Seoul, Seoul, Korea(taesuk79@gmail.com), (2) Dep. of Civil Engineering, Chonbuk National University, Jeonju-Si, Korea(hkwon@jbnu.ac.kr)

In this research, probability precipitation was calculated to reflect the climatic indices. Also, probability rainfall was calculated to reflect climate change. Climatic indices were used the sea surface temperature(SST) and specific humidity which observed around world. For the research, Climate Pattern and Precipitation Model(CPPM) was built for calculating probability precipitation. CPPM technique is the following description. The correlation coefficients were calculated between the annual maximum precipitation and the climatic indices. And Climatic indices which have the biggest correlation coefficient were selected. Therefore, the regression relationship was established by locally weighted polynomial regression. Next, climatic indices were generated by Monte Carlo simulation using Kernel function. Finally, the design rainfall was calculated by locally weighted polynomial regression using generated rainfall data depending on simulated climatic indices. Also, CPPM technique was used to presume for increasing of SST. At the result, the comparison of design rainfall between the reflection of the climatic indices and the frequency analysis did not indicate a big difference. If SST rises, probability precipitation will increase depending on SST increment.