

Application of Neural Network Model to Predict and to Evaluate the Groundwater Level Fluctuation

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Groundwater is one of valuable water resources used for the various purposes in our life, but it is not limitless. For this reason, prediction and management of the groundwater are very essential work for sustainable use of it. Physics-based models are usually applied on prediction of groundwater level, but they are hard to be implemented successfully when there is any unknown physical property or when subterranean structure is very complicated. In this research, prediction of the groundwater level at riverside area in Yangpyeong, Korea was carried out using neural network model instead. In study area where several natural and anthropogenic factors affect the groundwater level fluctuation, groundwater levels at 8 monitoring wells were well predicted with low range of RMSE errors. Moreover, monthly contributions, which indicate the impact of input variables, were computed to figure out the seasonal variance of influencing factors. This study could suggest another option to predict the groundwater level, and help understanding spatial and temporal variation of impacts of factors affecting the groundwater level fluctuation.

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Primary author: Mr LEE, Sanghoon (Seoul National University)

Co-author: Prof. LEE, Kang-Kun (Seoul National University)

Presenter: Mr LEE, Sanghoon (Seoul National University)

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