Objective Modeling Method of Hydrogeological Structure Applied in MODFLOW Modeling –A Case Study of Taipei Basin

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Taipei Basin is the capital of Taiwan. It suffered by land subsidence in the past, however, have highly soil liquefaction potential now. The appropriate groundwater model is needed to help to solve geological disasters in this area.

Groundwater modeling in previous research usually uses subjective methods to set boundary conditions, relative hydrogeological parameters and hydrogeological structure. It will result in many different models that people made in the same research area. This research is trying to use objective methods, the perspective of data, to build the groundwater model including hydrogeological structure modeling.This study mainly focuses on MODFLOW modeling and uses several statistic methods to support modeling. The Categorical Bayesian maximum entropy(BME) method and kernel density estimation are used to model the hydrogeological structure. The BME method also applied to estimate the hydraulic conductivity in each MODFLOW grid. And using the empirical orthogonal function(EOF)method to set the rainfall boundary condition.

Keywords: MODFLOW, Hydrogeological Structure modeling

