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## Using Data-based Modeled Groundwater Model to Developing Groundwater Optimal Pumping Strategy – A Case of Taipei Basin

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The Taipei Basin is located in the northwestern part of Taiwan. In the past, it faced the problem of ground subsidence due to the over-pumping of the groundwater layer. Later, due to the implementation of control policies, the situation of groundwater over-pumping has greatly improved, but now it is exposed to the risk of soil liquefaction due to the high groundwater level.

This research mainly trying to do two things. The first one is to establish the MODFLOW model by objective methods. Because the MODFLOW model was often established based on subjective conditions in the past it results that everyone has a different model in the same research area. This study tries to establish a more objective model. The second thing is to use the established model to develop an optimal pumping strategy, hoping to establish a pumping strategy that can minimize the risk of formation subsidence and soil liquefaction. This study includes an economical loss to assist in quantifying risk. The other constraints are well capacity, nonnegative constraint, soil liquefaction groundwater level upper limit and land subsidence water level lower limit. Evaluating the optimal groundwater control strategy by minimizing economical loss through MODFLOW parameterization using Monte-Carlo simulation.