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# The Groundwater monitoring network design in different layers : A case study of Taiwan Aquifer System

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The basic elements of groundwater planning, monitoring, and management is groundwater hydro-informatics. A well-planned network of groundwater monitoring stations can provide accurate and reliable, regional characteristics of groundwater information of the establishment of groundwater monitoring networks typically include topography, thickness and groundwater aquifer parameters and other factors, many factors will affect to the groundwater monitoring network for the location and density.
In this study, we proposed a geostatistic approach for underground water monitoring well network design. We applied hydraulic head as the input data to obtain the spatial structure of the study area. In order to measure the uncertainty of the candidate wells, Kriging Variance is proposed to be the index in this study. First, we decide which monitoring wells should be removed from the original network due to its bad spatial location or well devastation by using the Control –area algorithm. We proposed the sequential network design to decide which candidate well should be added into the underground water monitoring well network. The results show that 6 of 39 wells removed from the first layer of study area, 13 of 51 wells removed from the second layer,4 of 42 wells removed from the third layer, and 5 wells was suggested to add into the groundwater monitoring well network in the fourth layer.

Keyword: Sequential well design, Regional variable theory, spatial variation