

## Time Series Analysis to Determine the Aquifer Properties of a Fractured Aquifer

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This study demonstrates a time series analyze method in the research well site near You-luo stream in Shinchu County, Taiwan. The rainfall, river stage, and well water table records from January 2010 to August 2012 were used for analyzing the aquifer properties, such as the hydraulic conductivity. Considering an aquifer nearby a stream, the input stress (far field rainfall) causes a rising of the water level in the stream. Wells with different distances from the stream will obtain the water table variations after the raising of water levels in the stream. The aquifer parameters can then be estimated by the time difference of the response between stream and the wells. This method were verified succeed with employed FEMWATER simulation model. Preliminary results show that the hydraulic conductivity in the well field is 2973 m/day. The scale effect may be the reason for the four times higher value than that in previous investigation.

Keywords: Time Series Analysis, Aquifer Properties, scale effect