

The Study of Groundwater Anomalies Associated with the Earthquake Taiwan: An update in 2003

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In the Chi-Chi earthquake, geologists, geophysicists and hydrologists have noted that significant earthquake-induced groundwater levels changes in the Choushuishi alluvial fan, central Taiwan. Therefore, Water Resources Agency had began to initiate a five-year program to study the earthquake-induced groundwater physical and chemical properties changes to evaluate the relationship between groundwater changes and earthquake occurrences in Taiwan. That is one of main research item of the comprehensive national program "Program on Earthquake and Active fault Research" has been developed under the support from the National Science Council.

In this paper we make a brief review for the past two years, and to introduce the result of the project. Follow the experience of last two years; we reorganize our main work for next three year. Also revise the strategy to the scientific challenge. In the previously work, five main items of work had been done carefully, including (1) field investigation of potential sites for observation wells, (2) the establishment of the monitoring system, (3) observation data acquisition and transfer, (4) data analysis and interpretation, (5) development and establish of the procedures of monitoring.

In this year, the establishment of the good quality observation devices and monitoring system have been promote continuously. Beside that, theoretical approach from the observation data and mechanism explanation that have been implement attentively. Five research items had been promote in this year, including (1) amplify effect of the signal from the resonate of well-aquifer system, (2) molding of a strain - pressure coupling system, (3) estimation of the rainfall effect to ground water level, (4) detecting the anomalies changes using static methods (5) radon monitoring in the groundwater. All the research items have planned to construct the different approach of the project. We hope through these works, they will offer more opportunity to contribute the knowledge of hydrological and geochemical anomalies associated with the earthquake.