Long-term groundwater changes before and after the 1999 Chi-Chi earthquake, Taiwan

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The groundwater level changes induced by the 1999 Chi-Chi earthquake were well recorded at the monitoring wells in and around the Choshui River alluvial fan, Taiwan, which is adjacent to the focal region. The liquefaction and permeability enhancement, whose degrees depend on the geological setting and seismic ground motion, might explain the characteristics of the coseismic groundwater level changes in the Choshui River alluvial fan (Lai et al., 2004).

In this presentation, we will evaluate the long-term postseismic groundwater level changes in the focal region related to the earthquake ground motion, crustal deformation, permeability of the aquifer and geological structure based on the analysis of the groundwater level data at about 170 wells in the focal region during the period from 1995 to 2004.

Reference

Lai, W.-C., Koizumi, N, N.Matsumoto, Y. Kitagawa, C.-W. Lin, C.-L. Shieh and Y.-P. Lee, The effect of the seismic ground motion and geological setting on the coseismic groundwater level changes caused by the 1999 Chi-Chi Earthquake, Taiwan, Earth Planets Space, 56, 873-880, 2004.