

## Hydrological and geochemical cooperative research for earthquake forecasting in Taiwan

Naoji Koizumi<sup>1\*</sup>, Norio Matsumoto<sup>1</sup>, Wen-Chi Lai<sup>2</sup>, Mamoru Nakamura<sup>3</sup>

<sup>1</sup>Active Fault and Earthquake Research Center, AIST, <sup>2</sup>Disaster Prevention Research Center, National Cheng Kung University, Taiwan, <sup>3</sup>Faculty of Science, University of the Ryukyus

Active Fault and Earthquake Research Center, Geological Survey of Japan, AIST has been carrying out the cooperative research entitled "Hydrological and geochemical research for earthquake prediction in Taiwan" with Disaster Prevention Research Center, National Cheng-Kung University, Taiwan since 2002. We made much contribution to clarifying the mechanism of groundwater changes and their recoveries related to the 1999 Chichi earthquake, constructing a groundwater observation network composed of 16 wells in Taiwan and understanding the earthquake-related groundwater changes observed by the new groundwater observation network through this cooperative research. We also investigate seismotectonics in and around Taiwan. In Taiwan seismicity is more active and crustal deformation is more rapid than in Japan. Therefore observation and analysis of groundwater changes related to earthquake and crustal deformation in Taiwan will enable us to make rapid progress in hydrological and geochemical research for earthquake forecasting. This cooperative research will also give important information for evaluation of long-term groundwater changes in tectonically active areas like Japan and Taiwan.

Keywords: Taiwan, Groundwater, Earthquake prediction, Crustal deformation, Geochemistry, Ground shaking