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[\[Earth Sciences\] Taiwan-led Team Discovers Water Pressure Can Induce Quakes](#)

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CNA - Focus Taiwan (2012/07/31) A Taiwan-led research team has discovered that high water pressure can induce earthquake-causing rock failures, paving the way for future studies on the cause of earthquakes. The findings have been published in the July 27 issue of Science.

The team of Taiwanese, American and Japanese researchers discovered that underground fluid flows, when blocked by impermeable zones in the earth, could create bursts and cracks of 2-5 cm, which the team terms "isotropic events."

The researchers made their discovery after examining the Chelungpu Fault in central Taiwan, which ruptured during the magnitude 7.6 earthquake in Taiwan in 1999, known in Taiwan as the 921 quake.

In 2006, the team drilled a hole that penetrated the fault and installed a seven-level seismometer that collects data from depths of about 950 to 1,300 meters.

Kuo-fong MA, a National Central University professor who led the research, said many scientists believe that water pressure is related to the occurrences of quakes, but there has been no direct evidence discovered in the past to prove this theory.

"It is the first time that such a phenomenon has been directly observed," the earth science professor said at a press conference at the National Science Council, which co-funded the research.

She said the team has observed many "isotropic events" in a fluid-rich zone directly below the impermeable zone of the fault.

The data shows that only seismic waves, but no shear waves, were recorded, meaning that the bursts are not caused by the shifting of faults but more likely caused by fluid or gas explosions, said MA.

She said no research to date has been able to predict an earthquake or downsize the scale of one, but added that the results of her team's research could shed light in that direction.

She also said the research results could be used to assess the risk of carbon capture and underground storage in the future.

The research has been published in the July 27 issue of Science.

Further Information:

[CNA - Focus Taiwan 2012/07/31](#)

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[National Science Council International Cooperation Sci-Tech Newsbrief](#)

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