



## **Near-shore Deformation Front in Hsinchu Area, Taiwan**

Yi-Sin Wu and Gwo-Shyh Song

Institute of Oceanography, National Taiwan University, Taipei, Taiwan

The Taiwan orogenic system is the result of collision between the Luzon arc and the Asian continental margin with east-dipping subduction, and the Philippine Sea plate moves to the northwest at a rate of 82km/Ma relative to the Eurasian plate, forms a series of fold-and-thrust belts with north-south direction. The obliquity between the north-trending Luzon arc and the northeast-trending Asian continental margin suggests a time-space equivalence. Nowadays, the seismic activity is located in the Chukou–Chelungpu fault zone in Central Taiwan. In 1999, Chi-Chi earthquake which happened along the Chelungpu fault is the largest inland seismic event of the century. However, the seismicity doesn't cross the Da'an stream to the north because of the Sanyi-Puli Seismic Zone, a distinct NW-SE trending linear transition zone, probably controls the morphology of the thrusts in Northwestern Taiwan. Currently, the Changhua fault is the youngest fault that extending southward to Meishan and Hsinhua fault, northward to Tachia fault; then sheared by the Sanyi-Puli Seismic Zone. Geologists indicate that the deformation front along the Da'an stream developed in the Miaoli-Hsinchu near-shore and along the Taoyuan's coastline connected with Jinshan fault; finally, toward the ocean in Jinshan. However, lack of the geological and geophysical data in the Miaoli-Hsinchu near-shore, the location of the deformation front is uncertainty. This study will use the high resolution geophysical surveys to define the location of the deformation front and predict the seismicity of the faults in Taiwan.