



## **Monitoring of crustal deformation using GPS measurement and PS-InSAR in Caucasus area, Javakheti highland and Ararat basin**

Jyr-Ching Hu (1), Zhe Su (2), Horng-Yue Chen (3), and Arkady Karakhanyan (4)

(1) National Taiwan University, Department of Geosciences, Taipei, Taiwan (jchu@ntu.edu.tw), (2) Division of Tethys Center, Institute of Geology and Geophysics, Chinese Academy of Sciences, (3) Institute of Earth Sciences, Academia Sinica, (4) Institute of Geological Sciences, National Academy of Sciences of the Republic of Armenia

To realize the deformation behavior around the Caucasus area, a suture zone of Arabia-Eurasia continental collision, a cooperating project between Taiwan and Georgia has built up the campaign-mode GPS stations between greater and lesser Caucasus since 2007, and start to establish 12 Continuously Operating Reference Station (CORS) collaborated with Institute of earth Science, Ilia State University, Tbilisi, Georgia and Georisk, Yerevan, Armenia in 2012. The preliminary result shows the shorten rate reach 4 mm/yr in Javakheti Fault, 6 mm/yr in Lesser Caucasus and 3 mm/yr in greater Caucasus, with respect to station ZECK, located in Eurasia plate. A 2-D dislocation model is carried out to invert the locked depth and slip rate along the major N-S trending thrust fault. In addition, we use C-band Envisat radar images and PS-InSAR technique to analyze the deformation pattern in Javakheti highland. The average deformation rate is about 5-10 mm/yr along line of sight towards satellite (LOS), this result infers that the extensional or transtensional deformation is dominant in Javakheti highland. A significant uplifting is observed in the Ararat basin.