

Paper Number: 2981

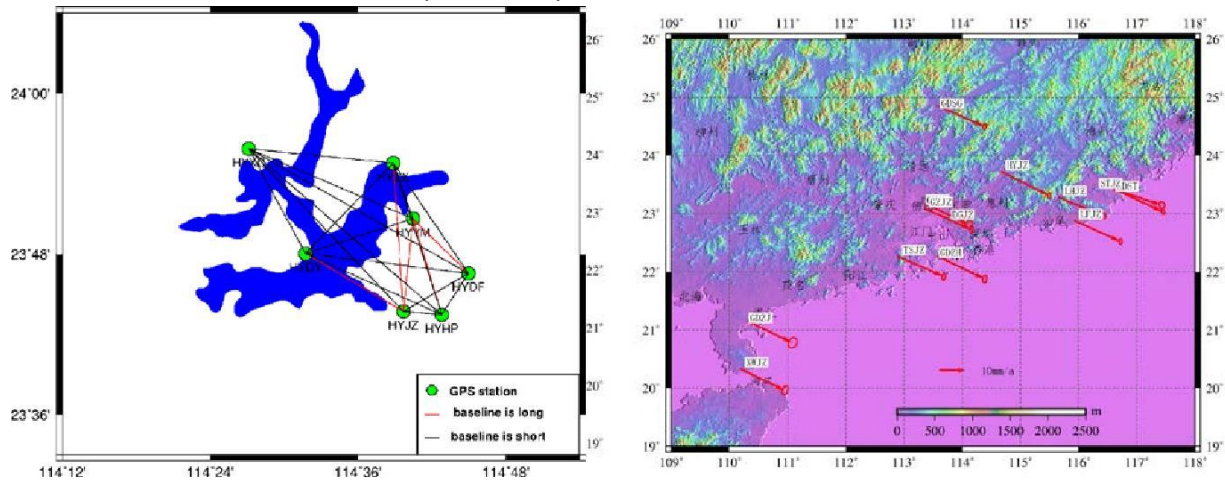
## crustal deformation characteristics revealed by GPS observations in Guangdong area

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In this study, 10 GPS flow observation points are increased around the Xinfengjiang reservoir (Fig.1). The observational data and the data of original 12 GPS continuous observation stations (Fig.2) in Guangdong region and surrounding IGS station observation are processed and analysed in a unified framework. The results of precise locations, baseline variations are got. The Guangdong region present crustal movement characteristics and are preliminary studied.



*Figure 1: Increased observation points and Variation of GPS baseline in Xinfengjiang reservoir area*      *Figure 2: GPS continuous observation stations and Velocity in Guangdong, China*

[1] In 21 baselines around Xinfengjiang reservoir, there only are 5 of the baseline is elongated, and the remaining 16 are shortened (Fig.1), accounting for 76%. So it can be concluded that the current tectonic deformation of Xinfengjiang reservoir is dominated by compressed.

[2] The GPS results in Guangdong Province show that the coordinates of each station is generally to the Southeast movement. The average rate of motion component is 29.75mm/a to east, 13.41mm/a to south. The HYJZ station in Xinfengjiang reservoir is the largest movement speed, and may be related to the recent earthquake activity.

[3] In May 2015 all continuous observation stations of Guangdong Province have decreased in the South movement speed, even reverse to North movement. Whether or not affected by the impact of the earthquake in Nepal MS 8.2, or the movement of Southeast coastal areas is locked. It is worth further follow-up study.

[4] Since 2010 STJZ-TWTF (in Taiwan) baseline without significant changes, and STJZ-GUAM baseline in shortening, It shows that Taiwan and the Philippines subduction belt in NW direction recently is not obvious locking phenomenon, and shallow compression in Guangdong area is not increased from Pacific plate and Philippine Plate NW subduction, but should be inserted material of the wedge in deep. Even in the overall pressure environment in China southeast coastal areas, It may stimulate local tensile or tensile shear activity.

[5] Before and after 2011, the deformation in the South China Sea and the southeast coastal areas were transferred from extrusion to compression. The turning point of this time is consistent with the seismic activity of the southeast coastal seismic belt, which shows that the transferring deformation from the South China Sea has a significant control effect on the seismic activities in the China southeast coastal area. At present, the extruded trend still on. Therefore, it is considered that the China southeast coastal seismic active will continue, and even moderate strong earthquakes may occur, it is noteworthy.

