

Horizontal Motions derived from Satellite Laser Ranging Observations

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Satellite Laser Ranging (SLR) is a technique of measuring round-trip time of a laser pulse between a ground station and a satellite. By using SLR data, we can determine the geocentric positions of the station and the satellite precisely. The results are used for the study of gravity, the earth tide, plate motions and so on.

Since 1982, the Hydrographic and Oceanographic Department of Japan has been continuing the SLR observation at Simosato Hydrographic Observatory in Wakayama Prefecture. In addition to this, during 1988 - 2001, it operated a mobile SLR station and carried out the SLR campaign observations at off-lying islands or coastal areas of Japan for the purpose of determining each precise position. In March 1996, it completed a first round observation at each site. After that, the re-occupations were carried out at four sites (Titi-Jima Island, Isigaki-Jima Island, Wakkanai and Tsushima Island) to detect each motion by comparing the results obtained in two or more different periods.

In this poster, we present the summary of the SLR observations using the mobile SLR system and horizontal motions of the sites where we occupied twice or more. Furthermore, we compare the motions with results derived from GPS observations by GSI.

The lists of the observation periods of the sites where we occupied twice or more are as follow:

Titi-Jima Island	1st	Jan.- Mar., 1998
	2nd	Sep. - Dec., 1996
Ishigaki-Jima Island	1st	Jul. - Oct., 1988
	2nd	Aug. - Nov., 1997
	3rd	Aug. - Nov., 1998
	4th	Sep., - Dec., 1999
Wakkanai	1st	Aug. - Oct., 1992
	2nd	Jun. - Sep., 2000
Tushima Island	1st	Oct. - Nov., 1989
	2nd	Oct. - Dec., 2001