

# [Devoted records between oceanand land origin thereby](https://assignbuster.com/devoted-records-between-oceanand-land-origin-thereby/)

devoted to the use of GPS derived rate of vertical land movement to decouple the source of tide gauge records between oceanand land origin thereby estimating long-term regional or global mean sea level rise (Mazzotti et al.

2003; Sella et al. 2007; Snay, 2007; Mazzotti et al. 2007 ; Mazzotti et al.

2008 ; Woppelman et al. 2007; 2009; 2014; Bouin and W¨oppelmann, 2010; Santamar´? a-G´omez et al., 2012; King et al., 2012; Burgette et al., 2013; Watson et al., 2015; Karegar et al.

2016; Woppelmanand Marcos, 2016; Hamlington et al. 2016; Frederikse et al, 2017). The accuracy of GPS derived vertical landmovemt estimateshas been increasing as the time span of the GPS observations is extending. This partly introduce to the differences of thevertical land movements estimate for the same station used in the afore-mentioned literatures owing to the the time differencesthe analysis had used. Besides, the reference frame (ITRF) is also upgraded as more data and models are becoming availableand increases the accuracy of the reference frame itself. The absolute vertical land motion is a geocentric motion with respectto the Earth’s centre of mass using a well defined terrestrial reference frame, similar to that measured from space by a satellitealtimeter technique.

Most importantly, the rate of vertical land movement estimate relies from different set of analysis centresolutions, in doing so, contribute in the difference between estimates of each individual solutions. After the two Carter Reports 1989; 1994 and the International GNSS Service (IGS)Workshop in 1997, the IGS establishedthe Tide Gauge Benchmark Monitoring (TIGA) Pilot Project which later evolved to the IGS TIGA Working Group Sch¨one etal., 2009. The Pilot Project and WG would study the use of GNSS measurements at or close to tide gauges in support of thesea level community. This study, for the first time will provide a combination of many global GPS solutions under the auspicesof the TIGA Working Group (WG), that results a spatially comprehensive map of VLM near or close to tide gauge benchmarks.

To achieve this objective, three TIGA Analysis Centers (TACs) contributed re-processed global GPS network solutions to TIGAWG, employing the latest bias models and processing strategies in accordance with the second re-processing campaign (repro2)of the IGS. These solutions include those of the British Isles continuous GNSS Facility – University of Luxembourg consortium(BLT), the German Research Centre for Geosciences (GFZ) Potsdam, the University of La Rochelle (ULR). The three TIGAglobal solutosns were combined and aligned to ITRF2008 using Combination and Analysis of Terrestrial Reference Frame(CATREF) software Altamimi et al. 2011. This combination provides global daily solutions by applying minimum constraintapproach on seven – parameter helmert transformation parameters between ITF2008 and subset of the selected core stationsdaily network solutio