

Abstract

Planet Earth is in continuous transformation. If we could move back in time 1.5 billion years we would not recognize any current feature on its surface, no mountains, no ocean basins, and relative positions of the continents. By contrast, if we look at the Moon with a telescope to show us how was 1500 million years ago, we would observe its surface, except for some new craters, has not changed. This is because the Earth, Moon unlike, not yet cooled and geologically remains active and in continuous movement.

This paper has attempted to validate GNSS techniques as a fundamental tool in internal geodynamic studies, directing research toward finding precursors in the field of seismology and volcanology.

To implement the utility of such techniques, there have been isolated geodynamic investigations published in various media:

- Displacement of GNSS permanent stations depending on the distance to the epicentre due to Japan's earthquake on 11 March 2011. Published in Survey review May 2013.
- Study of displacements produced by Lorca earthquake on 11 May 2011. Topcart October 2012.
- Study of permanent plate displacement by GNSS techniques, due to the earthquake in Turkey on October 23, 2011. Published in Mapping December 2013.
- Study of ground displacement produced by El Hierro submarine eruption on October 2011 through GNSS techniques. In revision.
- Study of land subsidence in Lorca, Murcia (Spain), by GNSS techniques. In revision.
- Basic study of active fault displacements in eastern Betic Cordillera, by GNSS techniques. In revision.