Combination T/P and Jason-1 Satellite Altimetry Data for Determination of Sea Surface Topography in Persian Gulf and Oman Sea

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Abstract

Changes and Countries development and need to Scientific, Cultural and Industrial commutation at Global level requires accessibility to maps and spatial information from the entire world. Achieving to this aim requires equalization of horizontal and vertical datum of all countries. Nowadays with developments in technology and after that increasing in precision of vertical datums is one of the basic arguments and there have been efforts to find vertical datum and relations between them. One of the problems that exist in using absolute heights is difference between M.S.L and Geoid.

The theoretical basis the absolute heights is Geoid but in practice M.S.L is used as absolute vertical datums. Therefore difference between M.S.L and Geoid is called sea surface topography.

In this research one of the all, we have carried out modeling mean sea level using T/P and Jason-1 satellites altimetry data on Persian Gulf and Oman sea , Accordingly Due to the significance of sea level topography in oceanographic studies a new model proposed using the combined satellites altimetry data and the EGM08 global Geoid model in order to determine and equalize the current height datum for Persian Gulf and Oman sea. Therefore, difference between M.S.L derived from T/P and Jason-1 Satellites altimetry data and EGM08 global Geoid model was assessed -0.9 and 1.1 meter respectively.

Keywords: Topex/Poseidon, Jason-1, sea surface topography, Geoid, satellite altimetry, Persian Gulf, Oman Sea, EGM08

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