

Determination of Mean Sea level using Satellite Altimetry Data: A Case Study

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INTRODUCTON

Sea level rise is as a result of thermal expansion of upper layers of the ocean and subsequent melting of glaciers and ice sheets (Davis *et al.*, 2010). Increased sea levels can be monitored using tide gauge measurements and more recently satellite altimetry readings. Altimetry is basically a technique for measuring height and has been used by mountaineers for many years (Jackson and Crocker, 2014) and also by pilots to determine their elevation before landing. They can be categorized into two types namely satellite (radar) and barometric altimetry.

Satellite altimetry measures the time taken by a radar pulse to travel from the satellite antenna to the target surface and back to the satellite receiver.

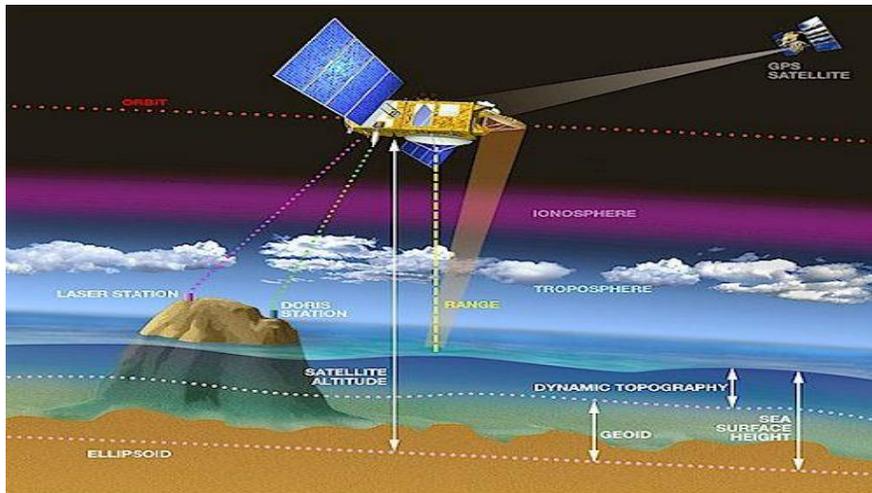


Fig. 1 Satellite to surface range (Souce: Rosmorduc *et al.*, 2011)

BACKGROUND

Ghana lies in the center of the Gulf of Guinea coast of land borders with three countries: Burkina Faso to the north, Ivory Coast to the west and Togo to the east. To the south are the Gulf of Guinea and the Atlantic Ocean.

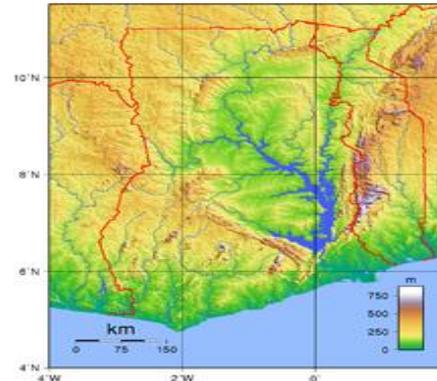


Fig. 2 Topography of Ghana
(Source: Anon., 2017)

RESEARCH QUESTIONS

The research aims at answering the following questions:

- Are there any other methods for determining Mean Sea Level apart from the primitive tidal gauge readings?
- What are the advantages of these methods over tidal gauge

OBJECTIVES

The objective of this research is to:

- Determine Mean Sea level using Satellite Altimetry data along the coast of Ghana.

MATERIALS AND METHODS

The materials and methods used include:

- Extensive literature review
- Acquisition of Satellite Altimetry Data from Aviso
- Prediction of Mean Sea level using Artificial Neural Network(ANN)

CONTACT INFORMATION

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