

## **Topex/Poseidon**

# **Evaluation of Topex/Poseidon Altimeter Data Height Using Accurate Elevation Data**

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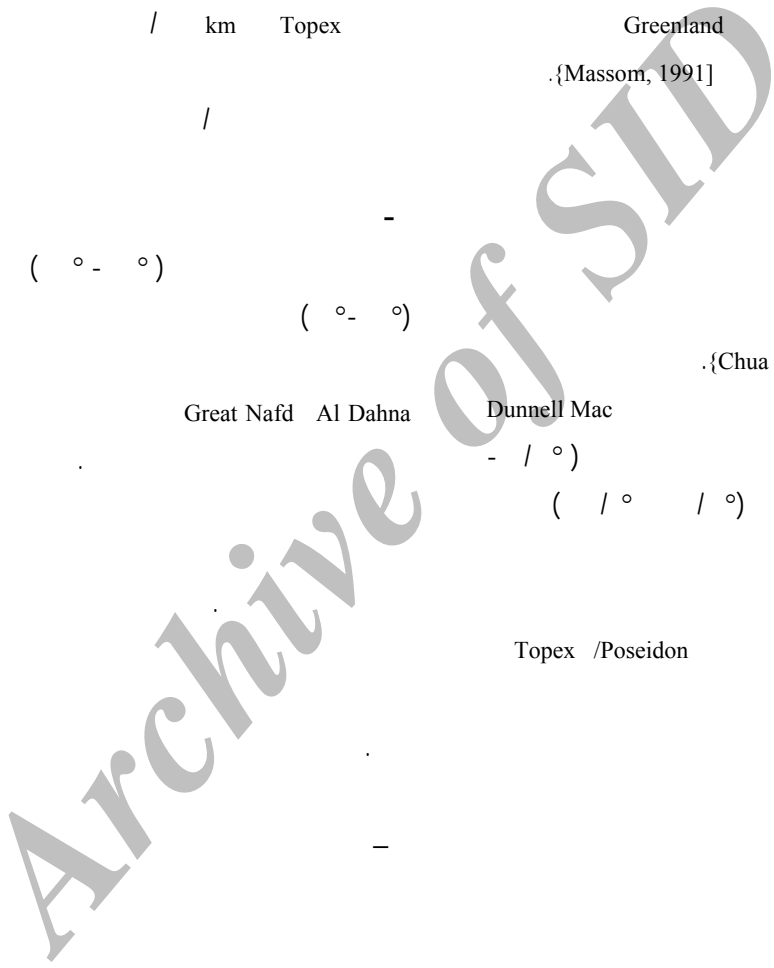
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### **Abstract**

The purpose of an altimeter is to make accurate and precise measurements of surface height. Height refers to the distance of the surface above a reference and is computed from satellite altitude and altimeter range. In order to fully assess the accuracy of the altimeter measurements, accurate ground height data in a digital format and with a sufficient coverage are required to compare with the altimeter height data. Ideally height values are needed to be better than the expected precision of the altimeter. The only satisfactory way to compare Radar Altimeter ( AR ) data with accurate co- ordinate data is comparing the calculated RA height data with the available accurate data on a point by point basis. To compare the height data all data should be on the same datum which means the same ellipsoid. However, the map will be referenced to local sea level rather to an ellipsoid and geoid. In the case when different datum levels are used this makes a comparison difficult and it is best to look at the height difference changes.

**Key words:** Satellite, Digital map, Radar altimetry, Geoid, Ellipsoid.

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 /  
 (cycle)  
 /  
 /  
 / Seasat  
 / km Topex Greenland ERS-1  
 .{Massom, 1991}  
 /  
 Seasat  
 simpson  
 ( ° - ° ) RMS  
 ( ° - ° )  
 Al Rub .{Chua et al, 1991} ± 0.4  
 Great Nafd Al Dahna Dunnell Mac Simpson  
 - / ° ) Eyre  
 ( / ° / ° ) (- / ° )  
 Topex /Poseidon  
 Topex/Poseidon  
 Topex/Poseidon  
 :  
 ( ) / km  
 :  
 -



(H diff)

[M.A.J.Guzkowska, et 1990]

( $\varphi, \lambda$ )

( $\varphi, \lambda$ )

Archive of SID

Benson Dgtzer

1- Spot  
2- Interpolation



Archive

( )

DTED

(1km\*1km)

DTED

Topex footprint

) Avgh

( DTED

Topex

RUB Al Khali

( )

Avgh

DTED

Avgh

DTED

Avgh

( )

DTED

Avgh

( )

Topex

:

RMS (HD)

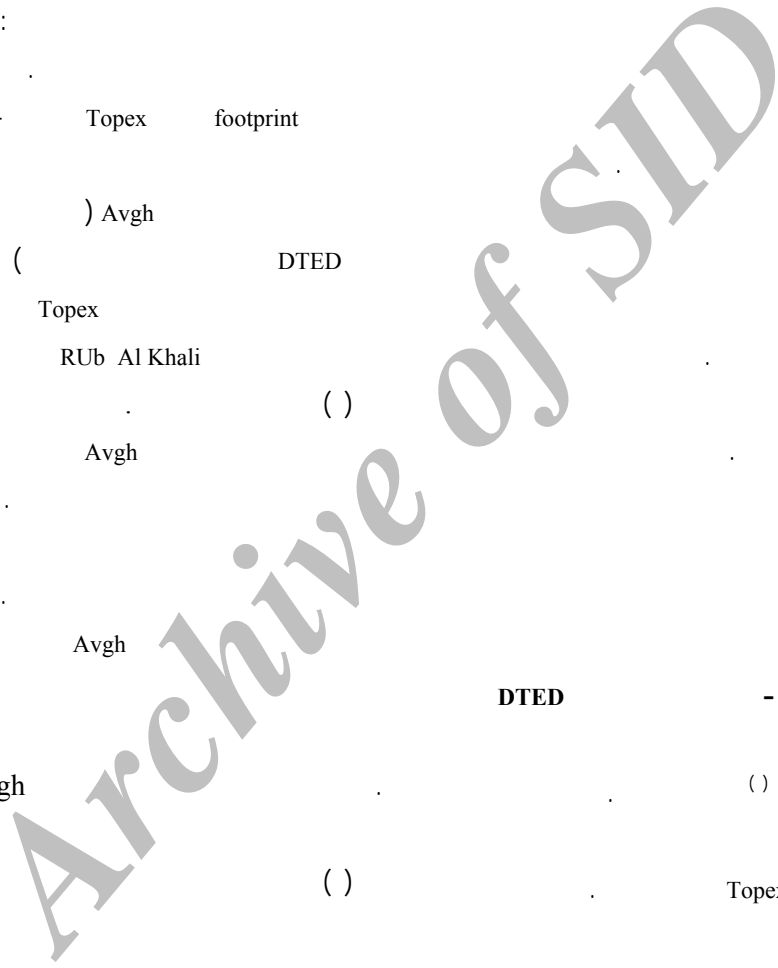
:

World Geodetic System

:

Topex

(RMS )



2- Range  
 1- Digital Terrain Elevation Data  
 2- Digital

( ) Avgh (Radar.Altimetry) -

			Radar.A Avgh
	E °N		m
	E °N °		m
	E °N °		m
	E °N °		m
	E °N °		m
	E °N °		m
	E °N °		m
	E °N •		m
	E °N •		m
	E °N °		m
	E °N °		m
	E °N °		m
	E °N °		m
	E °N °		m

Topex/ Poseidon -

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Avgh

% /

% /

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