

Satellite Altimetry for Geodesy, Geophysics and Oceanography

Proceedings of the International Workshop
on Satellite Altimetry, a joint workshop of
IAG Section III Special Study Group SSG3.186
and IAG Section II,
September 8-13, 2002,
Wuhan, China

Edited by
Cheinway Hwang, C.K. Shum
and Jiancheng Li



Springer

TABLE OF CONTENTS

Preface.....	V
Table of contents.....	VII
List of color figures.....	XI
Author index.....	279
 Keynote Speeches	 1
Geodetic Applications of Satellite Altimetry..... W. Bosch	3
Present-day Sea Level Rise : from Satellite and in Situ Observations..... to Physical Causes A Cazenave	23
Advances in Large-scale Ocean Dynamics from a Decade of Satellite..... Altimetric Measurement of Ocean Surface Topography LL Fu	33
 Geodetic Applications	 39
Calibration Results of GFO..... Changyin Zhao, C. K. Shum and Yuchan Yi	41
Determination of 30' × 30' Marine Gravity Anomalies from Multisatellite..... Altimetry Zhang Ruihua, Shi Pan, Peng Fuqing, Xia Zheren and Liu Guangming	47
Recovering Deflections of Vertical from Tangent Plane of Gridded..... Geoidal Heights from Altimetry Lifeng Bao, Yang Lu	53
Marine Gravity Anomaly from Satellite Altimetry: a Comparison of Methods..... over Shallow Waters Cheinway Hwang and Hsin-Ying Hsu	59
Enhanced Free-air Gravity Anomalies by Satellite Radar Altimetry..... Jeong Woo Kim, Daniel R. Roman, Ralph R.B. von Frese,	67
Topex Altimetric Mean Sea Level and Gravimetric Geoid..... in the North of Algeria S. Kahlouche, A. Rami, and S.A Benahmed Dahou	73

A Modified Method for Recovering Bathymetry from Altimeter Data.....	83
Zhai Guojun, Huang Motao, Ouyang Yongzhong, Bian Shaofeng, Liu Yanchun and Liu Chuanyong	
Absolute Calibration of the ERS-2 Altimeter using UK Tide Gauges.....	91
X. Dong , C. Huang, P. Woodworth, P. Moore and R. Bingley	
An Intercomparison of Parametric Models of Sea State Bias for the.....	99
TOPEX,Poseidon and Jason-1 Altimeters E.L. Mathers	
Determination of Global Mean Sea Surface Using Multi-satellite Altimetric.....	109
Data Jiang Weiping, Li Jiancheng and Wang Zhengtao	
Pseudo-Harmonic Representation of Gravity Field over South China Sea.....	115
Yang Lu, and Hou-Tse Hsu	
Geophysical and Oceanographic Applications.....	121
Investigation of Hydrological and Atmospheric Loading.....	123
by Space Geodetic Techniques H. Schuh, G. Estermann, J.-F. Crétaux, M. Bergé-Nguyen, and T. van Dam	
Joint Application of Altimeter Data and EGM96 to Submarine Tectonic and.....	133
Geodynamic Study in West Pacific Gao Jinyao, and Jin Xianglong	
Bathymetry and Crustal Thickness Variations from Gravity Inversion.....	143
and Flexural Isostasy. Carla Braitenberg, Elena Pagot, Yong Wang and Jian Fang	
Comparisons of Three Inversion Approaches for Recovering.....	151
Gravity Anomalies From Altimeter Data Huang Motao, Zhai Guojun, Bian Shaofeng, Ouyang Yongzhong,Liu Yanchun and Liu Chuanyong	
Accuracy Assessment of Gravity Field Models by Independent Satellite.....	161
Crossover Altimetry J. Klokočník, C.A. Wagner, J. Kostelecký and CH. FÖRSTE	
Low Frequency Change of Sea Level in the North Atlantic Ocean as.....	167
Observed with Satellite Altimetry Denis L. Volkov and Hendrik M. van Aken	

Application of Satellite Remote Sensing on the Tuna Fishery of Eastern Tropical Pacific Cho-Teng Liu, Ching-Hsi Nan, Chung-Ru Ho, Nan-Jung Kuo and Ming-Kuang Hsu and Ruo-Shan Tseng	175
The Kinematics of Mesoscale Eddies from TOPEX/POSEIDON Altimetry over the Subtropical Counter Current Cheinway Hwang, Ricky Kao and Chau-Ron Wu	183
Oceanographic applications	191
Oceanography with GPS Cinzia Zuffada, Stephen Lowe, Yi Chao and Robert Treuhaft	193
Geostrophic Uncertainty and Anomalous Current Structure in Association with Mesoscale Eddies Delineated by Altimeter Observations East of Taiwan Y. Yang , C. T. Liu, T. N. Lee and W. E. Johns	205
Current Variability over the Scotian Slope in the 1990s Guoqi Han	213
Determination of Sea Level Height Variation by Dynamics Crossover Adjustment Luying Cheng, and Hou-tse Hsu,	221
Extreme Southern Ocean Tide Modeling Yuchan Yi and C.K. Shum, Ole Andersen and Per Knudsen	225
The M ₄ Shallow Water Tidal Constituent From Altimetry and Tide Gauges Ole B. Andersen	231
Harmonic Tidal Analysis Along T/P Tracks in China Seas and Vicinity Jingyng Bao, Dingbo Chao, Jinping Zhao, Qi Wang and Yanchun Liu.	237
Analysis of Temporal Sea Level Variation in the Barents and the White Seas from Altimetry, Tide Gauges and Hydrodynamic Simulation S.A. Lebedev, O.I. Zilberstein, S.K. Popov and O.V. Tikhonova	243
The Envisat Radar Altimeter System J. Benveniste, M.P. Milagro-Perez, M. Roca and G. Levrini	251
Absolute Comparison of Satellite Altimetry and Tide Gauge Registrations in Venezuela Gustavo Acuña and Wolfgang Bosch	261

Sea Level Changes Detected by Using Satellite Altimeter Data and Comparing.....271
with Tide Gauge Records in China Sea
Zhengtao Wang, Jiancheng Li, Jianguo Hu and Dingbo Chao