

Contents

Part I LOTSE-CHAMP/GRACE

1	LOTSE-CHAMP/GRACE: An Interdisciplinary Research Project for Earth Observation from Space	3
	Frank Flechtner	
2	Improvement in GPS Orbit Determination at GFZ	9
	Grzegorz Michalak, Daniel König, Karl-Hans Neumayer and Christoph Dahle	
3	Using Accelerometer Data as Observations	19
	Karl-Hans Neumayer	
4	GFZ RL05: An Improved Time-Series of Monthly GRACE Gravity Field Solutions.	29
	Christoph Dahle, Frank Flechtner, Christian Gruber, Daniel König, Rolf König, Grzegorz Michalak and Karl-Hans Neumayer	
5	GRACE Gravity Modeling Using the Integrated Approach	41
	Daniel König and Christoph Dahle	
6	Comparison of Daily GRACE Solutions to GPS Station Height Movements	47
	Annette Eicker, Enrico Kurtenbach, Jürgen Kusche and Akbar Shabanloui	
7	Identification and Reduction of Satellite-Induced Signals in GRACE Accelerometer Data	53
	Nadja Peterseim, Anja Schlicht, Jakob Flury and Christoph Dahle	
8	Reprocessing and Application of GPS Radio Occultation Data from CHAMP and GRACE	63
	Stefan Heise, Jens Wickert, Christina Arras, Georg Beyerle, Antonia Faber, Grzegorz Michalak, Torsten Schmidt and Florian Zus	

Part II REAL GOCE

9	Real Data Analysis GOCE (REAL GOCE): A Retrospective Overview	75
	Wolf-Dieter Schuh and Boris Kargoll	
10	GOCE Gravity Gradients: Reprocessed Gradients and Spherical Harmonic Analyses	81
	Michael Murböck, Claudia Stummer, Roland Pail, Weiyong Yi, Thomas Gruber and Reiner Rummel	
11	GOCE Gravity Gradients: Combination with GRACE and Satellite Altimetry	89
	Johannes Bouman, Martin Fuchs, Verena Lieb, Wolfgang Bosch, Denise Dettmering and Michael Schmidt	
12	Incorporating Topographic-Isostatic Information into GOCE Gravity Gradient Processing	95
	Thomas Grombein, Kurt Seitz and Bernhard Heck	
13	Global Gravity Field Models from Different GOCE Orbit Products	103
	Akbar Shabanloui, Judith Schall, Annette Eicker and Jürgen Kusche	
14	Adjustment of Digital Filters for Decorrelation of GOCE SGG Data	109
	Ina Krasbutter, Jan Martin Brockmann, Boris Kargoll and Wolf-Dieter Schuh	
15	Stochastic Modeling of GOCE Gravitational Tensor Invariants	115
	Jianqing Cai and Nico Sneeuw	
16	Cross-Overs Assess Quality of GOCE Gradients	123
	Phillip Brieden and Jürgen Müller	
17	Consistency of GOCE Geoid Information with in-situ Ocean and Atmospheric Data, Tested by Ocean State Estimation	131
	Frank Siegmund, Armin Köhl and Detlef Stammer	
18	Regional Validation and Combination of GOCE Gravity Field Models and Terrestrial Data	139
	Christian Voigt and Heiner Denker	

19	Height System Unification Based on GOCE Gravity Field Models: Benefits and Challenges	147
	Axel Rülke, Gunter Liebsch, Uwe Schäfer, Uwe Schirmer and Johannes Ihde	
20	EIGEN-6C: A High-Resolution Global Gravity Combination Model Including GOCE Data	155
	Richard Shako, Christoph Förste, Oleh Abrikosov, Sean Bruinsma, Jean-Charles Marty, Jean-Michel Lemoine, Frank Flechtner, Hans Neumayer and Christoph Dahle	

Part III Future Missions

21	Future Gravity Field Satellite Missions	165
	Tilo Reubelt, Nico Sneeuw, Siavash Iran Pour, Marc Hirth, Walter Fichter, Jürgen Müller, Phillip Brieden, Frank Flechtner, Jean- Claude Raimondo, Jürgen Kusche, Basem Elsaka, Thomas Gruber, Roland Pail, Michael Murböck, Bernhard Doll, Rolf Sand, Xinxing Wang, Volker Klein, Matthias Lezius, Karsten Danzmann, Gerhard Heinzel, Benjamin Sheard, Ernst Rasel, Michael Gilowski, Christian Schubert, Wolfgang Schäfer, Andreas Rathke, Hansjörg Dittus and Ivanka Pelivan	

Observation of the System Earth from Space - CHAMP,
GRACE, GOCE and future missions

GEOTECHNOLOGIEN Science Report No. 20

Flechtner, F.; Sneeuw, N.; Schuh, W.-D. (Eds.)

2014, XV, 230 p. 95 illus., 38 illus. in color., Hardcover

ISBN: 978-3-642-32134-4