

Contents

Part I Satellite Orbit and Satellite Clock Error

Orbit Determination Based on Particle Filtering Algorithm 3
Daming Bai

A Method for Predicting Satellite Clock Bias Based on EEMD 11
Zan Liu, Xihong Chen, Jin Liu and Chenlong Li

**Estimation, Validation, and Application of 30-s GNSS Clock
Corrections 21**
Rengui Ruan, Ziqing Wei and Xiaolin Jia

GNSS Performance Research for MEO, GEO, and HEO 37
Huicui Liu, Xiao Cheng, Geshi Tang and Jing Peng

**Research on the On-Orbit Precision Evaluation Method
of Inter-Satellite Measurement Based on Geometry Configuration 47**
Daoning Yang, Jun Yang, Gang Li, Haojie Wang and Ying Liu

**Research on Distributed Autonomous Time Reference
Maintain Method of Navigation Constellation 55**
Daoning Yang, Gang Li, Ying Liu, Jun Yang, Yinan Meng
and Xianyu Zhang

**A Study on the Orbit Accuracy Variation Characteristics
and Yaw-Attitude Modes of Beidou Navigation Satellites 65**
Guofeng Ji, Yuxi Liu, Zhiqiang Yang and Xiaolin Jia

**A Method for Polar Motion Prediction Based on LS Model
of Error Compensation. 77**
Zhiwen Wang, Hui Xu, Qianxin Wang and Yilei He

**Research on Autonomous Orbit Determination Test Based
on BDS Inter-Satellite-Link on-Orbit Data 89**
Haiong Wang, Qiuli Chen, Weisong Jia and Chengpan Tang

GNSS Satellite Observations with Interference Measurement Technology	101
Li Li, Geshi Tang, Tianpeng Ren, Jing Sun, Ming Shi and Junwei Wang	
Experiment Research on GEO Satellite Orbit Measurement by Using CEI	113
Zejun Liu, Chunlin Shi, Lan Du, Lili Wu and Ruopu Wang	
Real Time Precise Satellite Clock Estimation for Quad-System GPS/GLONASS/GALILEO/BDS	125
Xiaotao Li, Hua Chang, Shaoming Xin and Jianghui Geng	
The Analysis and Modeling of Intersystem Biases Between GPS and BDS	137
Dongwei Zhu, Dingfa Huang, Abubakr Hassan and Bolin Xiong	
Research on Dependability of Navigation Satellite Precise Orbit Determination Based on Regional Monitoring Network	149
Zhuopeng Yang, Shanshi Zhou, Heng Zheng and Xiaogong Hu	
Combined Precise Orbit Determination for High-, Medium-, and Low-Orbit Navigation Satellites	165
Haibo Ge, Bofeng Li, Maorong Ge, Yunzhong Shen, Liangwei Nie and Harald Schuh	
Design of Deorbit Parameters for BEIDOU MEO and IGSO Satellites Based on Long-Term Eccentricity Evolution	181
Chen Xingyi, Zhang Wei and Xie Chen	
A New Method and Strategy for Precise Ultra-Rapid Orbit Determination	191
Hongyang Ma, Qile Zhao and Xiaolong Xu	
Annual Variation Analysis and Forecasting Model of DCB Parameters for BDS Satellites	207
Xiaoli Wu, Xiao liu, Shuai Gao, Feng Zhou, Li Gu and Enqiang Dong	
Real-Time GPS Satellite Clock Estimation Based on OpenMP	217
Kang Gao, Shoujian Zhang, Jiancheng Li, Xinyun Cao and Kaifa Kuang	
Part II Precise Positioning Technology	
A New RTK Ambiguity Resolution Method	229
Bingquan Dong and Huan Liu	
Algorithm and Experimental Analysis of Medium-Long Baseline Static Positioning Based on BeiDou Dual-Frequency Observations	239
Junjun Ying, Fengbo Wu and Wanke Liu	

A New Method of the Real-Time Precise Point Positioning Based on Epoch Difference of Satellite Clock Offset	251
Taogao Dai, Chen Chen, Jianwen Li, Peng Pang and Yongtao Li	
Epoch-Differenced Cycle Slip Resolution Technique Considering Velocity Constraint	263
Yuanjun Chen, Xiang Zuo, Xiaoyu Shi and Chenggang Li	
The Application of Instrumental Bias Estimation to Single Point Positioning	275
Weijun Lu and Guanyi Ma	
Characteristic Analysis of Offshore Zenith Tropospheric Delay Based on GPS/BDS/GLONASS PPP	285
Xue Wang, Lin Zhao, Liang Li, Peng Cui and Jie Zhang	
GPS/BDS Real-Time Precise Point Positioning for Kinematic Maritime Positioning	295
Fuxin Yang, Liang Li, Lin Zhao and Chun Cheng	
Applicability Analysis of Troposphere Mapping Functions in China	309
Zong-qiang Liu, Ya-min Dang, Qiang Yang and Hu Wang	
A Multi-Redundancies Network RTK Atmospheric Errors Interpolation Method Based on Delaunay Triangulated Network	321
Rui Shang, Chengfa Gao, Shuguo Pan, Denghui Wang and Longlei Qiao	
An Accurate Height Reduction Model for Zenith Tropospheric Delay Correction Using ECMWF Data	337
Yufeng Hu and Yibin Yao	
Centimeter Level Precise Positioning with a Low-Cost GNSS Antenna	349
Xiang Zuo, Yuanjun Chen, Xiaoyu Shi and Chenggang Li	
Triple-Frequency Carrier Ambiguity Resolution with Low Noise and Ionosphere-Free Impact for BDS	361
Jing Cao, Baowang Lian and Yulong Song	
Performance Analysis of Multi-GNSS Precise Point Positioning	377
Jiang Guo, Xiaotao Li, Xingyu Chen, Jianghui Geng, Qiang Wen and YuanXin Pan	
The Positioning Performance Analysis of BDS/GPS Single Frequency-Single Epoch of Asia Pacific Region for Short Baseline	389
Xin Liu, Qiuzhao Zhang and Wei Yang	

The Wide- and Local-Area Combined GNSS Real-Time Precise Positioning Service System and Products	409
ZhiQiang Dai, Qile Zhao, Yifei Lv, Jia Song, Jinning Zhou, Sheng Yang and Mingze Gu	
Real-Time Detection and Repair of Cycle Slips in Triple-Frequency BDS Measurements.	429
Huabo Wei, Xiaoqing Zhang, Zhanyu Zhang, Yu Li and Ruifan Pang	
Preliminary Study on Changes in Temperature and Its Implication on Vertical Displacements of Antarctic GPS Stations.	443
Wenhao Li, Shengkai Zhang, Jintao Lei, Qingchuan Zhang and Chaohui Zhu	
An Improved Constraint Result Zone Search Algorithm for Measuring Attitude Based on Dual Frequency	453
Yuan Quan, Xiubin Zhao, Chunlei Pang, Yong Wang and Chao Gao	
The Detection and Repair of Cycle-Slip Based on the Combination of BeiDou Triple-Frequency Observations	467
Xu Feng, Changjian Liu, Chen Liu, Lingfeng Xu and Ying Du	
Research on Fast RTK GNSS Algorithm Based on Partial Ambiguity Resolution	481
Nannan Hu, Hongping Zhang, Yongzhong Shi, Ronghao Wei and Tuan Li	
Part III Atomic Clock and Time-Frequency Technology	
Development of 15 kg Space Mini Passive Hydrogen Maser	495
Yonghui Xie, Tao Shuai, Pengfei Chen, Yuxian Pei, Xiaoyan Pan and Chuanfu Lin	
Verification and Analyzing of the Reliability and Lifetime of Space Passive Hydrogen Maser	505
Pengfei Chen, Yonghui Xie, Tao Shuai, Yang Zhao, Yuxian Pei, Chao Shen and Xiaoyan Pan	
Studying on the Leap Second Calculational Methods in BeiDou System	515
Mengfei Cheng, Fengfeng Shi, Jinfeng Xu, Yang Wang and Shengli Zhang	
The Identification of Satellite Clock Noise Based on LAG1 Autocorrelation of Overlapping Samples.	525
Qingsong Ai, Tianhe Xu, Dawei Sun, Hongwei Xiong and Shengchao Wang	

A Simple and Effective Method for Abnormal Data Processing of Atomic Clock Time Difference	541
Dongmei Yue, Yangqi Liu, Qiang Li and Zhen Qiu	
Performance Test and Power-Law Spectrum Analysis of Domestic Cesium Clocks	547
Xianglei Wang, Yan Du and Jun Zhang	
High Precise Time Delay Measurement in Optical Fiber	553
Jingwen Dong, Bo Wang, Hongwei Si and Lijun Wang	
Design of a Miniaturized High-Performance Rubidium Atomic Frequency Standard	563
Chen Wang, Pengfei Wang, Shidong Yan, Shengguo He, Fang Wang, Feng Zhao and Ganghua Mei	
High Gain, Low Noise, and Long Lifetime MCP Electron Multiplier for Cesium Clock	575
Yifei Wang, Xi Zhu, Lianshan Gao and Haibo Chen	
Joint Time and Frequency Transfer and Multipoint Time Synchronization via Urban Fiber and Its Application in CEI	583
Youzhen Gui, Jialiang Wang, Haitao Li, Shaowu Chen, Nan Cheng, Qin Liu, Zitong Feng, Fei Yang, Wei Chen and Haiwen Cai	
Research on Microwave Oscillator Based on Cryogenically Cooled Sapphire Cavity	593
Xi Zhu, Yifei Wang, Haibo Chen, Kai Huang and Lianshan Gao	
Part IV Policies and Regulations, Standards and Intellectual Properties	
Analysis of GNSS User/Industry Interoperability Viewpoint Survey Results	605
Tao Han, Xiaochun Lu, Juan Du, Xiaozhen Zhang and Yongqiang Ji	
Applicability Analyses of Intellectual Property Securitization in Beidou Enterprises	621
Yalan Li and Yingchun Shen	

China Satellite Navigation Conference (CSNC) 2017

Proceedings: Volume III

Sun, J.; Liu, J.; Yang, Y.; Fan, S.; Yu, W. (Eds.)

2017, XIX, 632 p. 375 illus., Hardcover

ISBN: 978-981-10-4593-6