



Chinese Beidou and the Next Generation GNSS

Kefei Zhang¹, Jingnan Liu² and Yuanxi Yang³

¹(RMIT University, Melbourne, Australia)

²(Wuhan University, Hubei, China)

³(China National Administration of GNSS and Applications, Beijing, China)

(Email: kefei.zhang@rmit.edu.au)

The China Satellite Navigation Conference (CSNC) is an open dedicated GNSS forum for high-level scientific discussion, academic exchange, research promotion and technology innovation / industry exhibition. The primary aims of this annual event are to; showcase the latest GNSS developments and achievements, to advance current theories and technological innovations, to promote rapid system building, development and new applications and to enhance international cooperation and collaboration in the satellite navigation industry.

Following the well-received, inaugural CSNC convened in 2010, the second CSNC was successfully held on 18–20 May 2011 in Shanghai, China. Key national and international GNSS system administrators, renowned scientists, scholars and entrepreneurs were among the invited guests who attended the conference. The success of the 2010 and 2011 CSNCs has been an important step forward towards the provision of a regular and open platform for the international GNSS community.

Over 1,500 delegates participated in the conference and presented 633 technical papers. The key areas covered include:

1. Policies and regulations, system standards, safety and project management in the satellite navigation industry;
2. BeiDou/GNSS application and industrialisation;
3. GNSS signals, compatibility and interpretability;
4. Satellite navigation system enhancement and integrity monitoring;
5. Precise orbit determination and data processing;
6. Atomic clock techniques, time reference systems and synchronisation;

7. BeiDou/GNSS test and evaluation technology;
8. BeiDou/GNSS user terminal technology;
9. GNSS fundamentals, basic technology and scientific applications; and
10. New theories, new algorithms, and innovative applications.

Out of the 633 papers presented, 20 young researcher papers were selected for the ‘Best Paper’ award and over 100 peer-reviewed papers were recommended for publication in national and international journals such as; SCIENCE CHINA Physics, Mechanics & Astronomy, Acta Geodaetica et Cartographica Sinica, Chinese Space Science and Technology, the Journal of Wuhan University and the Journal of Navigation (UK).

This special issue of the Journal of Navigation includes seventeen papers selected from the second CSNC conference through a strict peer-review process. Apart from the fundamental research and development related to new algorithms for high precision positioning, navigation, signal in space errors and signal propagation, this special issue captures the latest technological developments, progress and recent achievements related to the next generation GNSS, in particular Chinese BeiDou-related signals, open services, compatibility and interoperability, integration and satellite constellation and time system. This will be the first collective publication of Beidou/Compass related material released in English. It is anticipated that the publication of this “Chinese BeiDou and the Next Generation GNSS” research will play an important role in heralding a new era for the international GNSS community.

The reviewers are gratefully acknowledged for the time and effort they contributed towards the review processes. They include: Dr Suqin Wu (Australia), Prof Hongping Zhang (China), Dr Brett Carter (Australia), Ms Sarah Gordon (Australia), Dr Ming Zhu (Australia), Dr Liwen Dai (US), Dr Falin Wu (China), Dr Maorong Ge (Germany), Dr Shengyue Ji (HK/China), Dr Di Qiu (US), Dr Zhizhao Liu (HK/China), Dr Grace Gao (US), Prof Jade Morton (US), Dr Robert Norman (Australia), and Prof Wu Chen (HK/China).

Guest Editors:

Kefei Zhang, RMIT University, Melbourne, Australia

Jingnan Liu, Wuhan University, Hubei, China

Yuanxi Yang, China National Administration of GNSS and Applications, Beijing, China

