

Preface

The ISPRS Technical Commission I Symposium 2014, jointly organized by the ASPRS Pecora Fall meeting in Denver, CO, November 17-20, 2014, attracted contributions from all the six continents, representing more than twenty countries. From the about 100 submissions, 62 were accepted for oral presentation, and from the 20 full-paper submissions ten passed the double-blind peer-review. These articles provide a good review on recent developments in the state-of-the-art sensing techniques and methods of photogrammetry, remote sensing and engineering geomatics, as well as their applications to Earth Sciences.

Technological developments in sensing and platforms have shown an accelerating pace in recent years, resulting in dramatic changes in geospatial data acquisition. Rapidly advancing sensor systems, such as airborne and satellite imaging, hyperspectral sensing, GNSS, LiDAR, and IfSAR, can simultaneously acquire both redundant and complementary data, allowing for robust data integration and fusion. In addition, sensors are increasingly used in networks, as the complexity of the topographic and thematic processes requires high resolution observations in both spatial and temporal domain. The rapid developments in sensing, not surprisingly, greatly impact all the downstream data and information extraction processes, resulting in intensifying algorithmic research and statistical analysis to primarily support decision making at both local and global scale.

The manuscripts in both the ISPRS Annals and Archives cover a broad range of topics related to remote sensing platforms and sensing technologies. On the platform side, UAS and small satellite constellations have shown remarkable developments, generating unprecedented interest, and prompting sensor providers to accommodate these remote sensing platforms. In particular, advancements in LiDAR technologies are noteworthy, as miniaturized laser sensors are in high demand. Research to exploit the new sensors and sensing capabilities offered by cooperating sensor platforms is rapidly increasing.

It is my pleasure to present this fine collection of articles to the ISPRS community and certainly hope that it will stimulate further research. I am grateful to all of the authors who contributed to this publication and I would like to thank the Scientific Committee members and other reviewers who provided essential service to the publication process.

Charles Toth, Editor

Boris Jutzi, Co-Editor

Preface

The theme of the Pecora 19 2014 fall meeting was “Sustaining Land Imaging: UAS to Satellites”. The meeting was held in Denver CO, November 17-20, 2014, and was jointly organized with the International Society for Photogrammetry and Remote Sensing (ISPRS) Technical Commission. Both Pecora and ISPRS had separate calls for submissions, with calls for contemporary remote sensing contributions. For Pecora, we selected 90 submissions for oral presentation, two for panel discussion, and about 66 for poster presentation. We received 20 full paper contributions, which are published in the Archives. These papers constitute a wide array of remote sensing topics, and provide much information that will be of considerable interest to the remote sensing community.

Technological developments in remote sensing data acquisition and processing approaches are changing rapidly. We are currently experiencing an explosion in airborne and satellite technology designed to help us to understand our changing planet. An important part of this includes instrument calibration, which helps to provide data with the best quality possible, which leads to improved data products. Concomitant with the evolving instrumentation and calibration, there has been remarkable progress towards developing data sets and approaches for characterizing the Earth’s land surface, ranging from local to global scales, and from the past to the present. These data sets have multiple uses, and are being used for assessing, monitoring and managing our natural resources, determining the impacts and responding to a variety of hazards and disasters such as fires, tsunamis, and hurricanes, as well as determining the environmental impacts of global change. Key to this process is developing new and innovative approaches for data mining and image analysis, which enables us to derive better and more comprehensive data sets than ever before, and to derive them more efficiently with an eye towards operations. All of these activities are important to developing a better view our changing planet, and are helping to provide key information so that we know how to best move forward.

It is my pleasure to present this collection of articles submitted to the Pecora community and hope that it will stimulate further research. I am grateful to all of the authors who contributed to this publication collection.

Thomas Holm, Editor