

ISPRS Congress Book

Advances in Photogrammetry, Remote Sensing and Spatial Information: 2008 ISPRS Congress Book (Balkema, CRC Press), edited by Zhilin Li, Jun Chen, and Emmanuel Baltsavias, is a compilation of 34 chapters by over sixty contributors. This congress book offers a state-of-the-art review in the areas of Photogrammetry, Remote Sensing and Spatial Information Sciences. It focuses mainly on advances made in these areas during the four-year term between the 2004 and 2008 ISPRS Congress.

The book is in six parts. The first deals with the historical development of ISPRS from its inauguration in 1910 to today's multi-member organisation of international impact. Also presented are recent developments in photogrammetry and RS sensors and cameras. Another topic addressed is the impact of new sensors, processes and growing demand for data.

Part two deals with sensors and data acquisition, presenting issues such as space- and airborne, high- and medium-resolution optical systems, radar and frame cameras, single-, hyperspectral-, panoramic- and three-line scanners, or single- and multi-camera systems. Close-range photogrammetry is represented by an overview of instrumentation such as solid-state sensor cameras of high-resolution character, high-speed, omni-directional and multi-ocular camera systems. Also presented are recent developments in Lidar, mobile land-mapping systems, small satellite missions and unmanned aerial vehicles for photogrammetry and remote sensing.

Part three presents theoretical and application aspects of data processing, starting with an overview of signature acquisition covering spectral LTM and recent advances in modelling, temporal, geometrical and polarisation. Also discussed are geometrical modelling aspects of panoramic imagery, linear CCDs, SAR, Lidar and DSM generation. There follow chapters addressing, respectively, feature extraction from medium geometrical-resolution spectral data, object extraction and identification from hyper-spectral data, and change detection from multi-source data. This presents an overview as well as advanced solutions.

Part four deals with data modelling, maintenance and spatial-data visualisation. It starts with review chapters on spatio-temporal and multi-scale modelling, representation and visualisation, and 3D-data modelling. Discussed are abstraction and representation of real-world phenomena, topology, space and time, multi-scale effects, multiple representation, and semantic and geometric techniques. Other subjects covered are dynamic GIS, starting with traditional Static 2D, 2.5D and other static structure models for cartography or GIS, as well as advances enabling the recognition of movement, collisions etc, through topological structuring and maintenance of objects based on Voronoi data structure and Delaunay triangulation. These are followed by an overview along three avenues: extraction of semantic information, ontology comparison, and integration.

Part five presents most recent and advanced applications covering Digital Photogrammetry, Remote Sensing and GIS. Among these are SDI, GSDI clearinghouses, LBS, web services, automatic processes for updating geospatial databases from images, cultural heritage documentation, natural disaster management, near-real-time mapping activities, integration of multi-source data, environmental sensing and human health, industrial close-range photogrammetry, medical and forestry applications.

Part six discusses aspects of education and outreach. It presents efforts made by ISPRS Commission VI from 2004 to 2008 in terms of technology change transfer, e-learning and education outside universities, and possible future education and learning initiatives. The last chapter deals with the outreach of the ISPRS as a society and its co-operation with geo-unions, other societies and organisations.

The publication is comprehensive and well focused in most chapters. It is an interesting and enlightening read for scientists, researchers, university students and professionals.

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