

1. Record Nr.	UNINA9910456367603321
Autore	Vosselman G
Titolo	Airborne and Terrestrial Laser Scanning [[electronic resource]]
Pubbl/distr/stampa	Dunbeath, : Whittles Publishing, 2010
ISBN	1-62870-092-0 1-84995-013-X
Descrizione fisica	1 online resource (337 p.)
Altri autori (Persone)	MaasH.G
Disciplina	910.285
Soggetti	Imaging systems in geology Laser recording Optical scanners Remote sensing Three-dimensional imaging in geology Geography Earth & Environmental Sciences Geography-General Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di contenuto	""Contents""; ""Preface""; ""The Authors""; ""List of Abbreviations""; ""Chapter 1 Laser Scanning Technology""; ""1.1 Basic measurement principles of laser scanners""; ""1.1.1 Time-of-flight measurement""; ""1.1.2 Phase measurement techniques""; ""1.1.3 Triangulation-based measurements""; ""1.2 Components of laser scanners""; ""1.2.1 Light sources""; ""1.2.2 Laser beam propagation""; ""1.2.3 Photodetection""; ""1.2.4 Propagation medium and scene effects""; ""1.2.5 Scanning/projection mechanisms""; ""1.3 Basics of airborne laser scanning""; ""1.3.1 Principle of airborne laser scanning"" ""1.3.2 Integration of on-board systems""""1.3.3 Global Positioning System/Inertial Measurements Unit combination""; ""1.3.4 Laser scanner properties""; ""1.3.5 Pulse repetition frequency and point density""; ""1.3.6 Multiple echoes and full-waveform digitisation""; ""1.3.7 Airborne laser scanner error budget""; ""1.4 Operational aspects

of airborne laser scanning"; ""1.4.1 Flight planning"; ""1.4.2 Survey flight"; ""1.4.3 Data processing"; ""1.4.4 Airborne laser scanning and cameras"; ""1.4.5 Advantages and limitations of airborne laser scanning"; ""1.5 Airborne lidar bathymetry"
""1.6 Terrestrial laser scanners"" Acknowledgements"; "References"; ""Chapter 2 Visualisation and Structuring"; ""2.1 Visualisation"; ""2.1.1 Conversion of point clouds to images"; ""2.1.2 Point-based rendering"; ""2.2 Data structures"; ""2.2.1 Delaunay triangulation"; ""2.2.2 Octrees"; ""2.2.3 k-D tree"; ""2.3 Point cloud segmentation"; ""2.3.1 3D Hough transform"; ""2.3.2 The random sample consensus algorithm"; ""2.3.3 Surface growing"; ""2.3.4 Scan line segmentation"; ""2.4 Data compression"; "References"; ""Chapter 3 Registration and Calibration"
""3.1 Geometric models"" 3.1.1 Rotations"; ""3.1.2 The geometry of terrestrial laser scanning"; ""3.1.3 The geometry of airborne laser scanning"; ""3.2 Systematic error sources and models"; ""3.2.1 Systematic errors and models of terrestrial laser scanning"; ""3.2.2 Errors and models for airborne laser scanning"; ""3.3 Registration"; ""3.3.1 Registration of terrestrial laser scanning data"; ""3.3.2 Registration of airborne laser scanning data"; ""3.4 System calibration"; ""3.4.1 Calibration of terrestrial laser scanners"; ""3.4.2 Calibration of airborne laser scanners"
""Summary"" References"; ""Chapter 4 Extraction of Digital Terrain Models"; ""4.1 Filtering of point clouds"; ""4.1.1 Morphological filtering"; ""4.1.2 Progressive densification"; ""4.1.3 Surface-based filtering"; ""4.1.4 Segment-based filtering"; ""4.1.5 Filter comparison"; ""4.1.6 Potential of full-waveform information for advanced filtering"; ""4.2 Structure line determination"; ""4.3 Digital terrain model generation"; ""4.3.1 Digital terrain model determination from terrestrial laser scanning data"; ""4.3.2 Digital terrain model quality"
""4.3.3 Digital terrain model data reduction""
