

WITOLD WOLSKI

Contacts

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**Tor Vergata University, Rome, DISP Department , Faculty of Engineering
c/o**

**La Sapienza University, Rome, Faculty of Engineering - DITS Department
Geodesy and Geomatics Area**

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Personal Information

Nationality: Italian
Gender: Male
Date of birth: December 05th 1972

Research Interests

Remote Sensing Techniques for Terrain and Environment monitoring

Digital Photogrammetry, Lidar Topographic Mapping, GPS-INS systems, data Georeferencing, Topographic techniques, data validation, DSM-DTM generation, XYZI data classification and change detection, DINSAR data analysis and validation.

Academic Background

Ph.D., in progress (expected Dec. 2009), Tor Vergata University, Rome

Co-tutored from Tor Vergata and La Sapienza University, Rome
Thesis: *Remote Sensing Techniques applied to Slope Stability Monitoring*
Advisers: Prof. Maria Marsella

M.S., Environmental Engineering, December 2003, La Sapienza University (Rome, Italy)

Thesis: *DINSAR techniques applied to alpine slope movements monitoring: a study in Val di Susa*
Final mark: 110/110

Employment

12/2008 - present

Project Manager, ITALECO S.p.A. Rome, Remote Sensing Responsible

- currently developing activities for the Consorzio ITA (Italian Consortium for the Remote Sensing applied to Environment and Agriculture): aerial survey project in the Republic of Haiti;
- international partnership agreements for business development.

07/2008 - 12/2008

Project Engineer, ITALECO S.p.A. Rome - Environmental Engineering Area

- feasibility studies for airborne LIDAR mapping in the Republic of Haiti, Caribbean Area, approximate coverage of hydrographic basins for around 5000 square km at high density (2-4 points/square meter);

- cost estimates for aerial surveys and data processing in the Caribbean area with USA partners;
- SIPA project (Sistema Informativo Ambientale della Regione Puglia - Environmental Information System for Puglia Region, Italy): vocational training course general planning according to the Master Program and Project Manager supervision;
- Tender for aerial surveys in Madagascar: technical offer document preparation.

02/2006 - 07/2008

Project Engineer at NUOVA AVIORIPRESE s.r.l., Naples, Italy, Capodichino Civil Airport

Responsible for the Aerial Surveys with Zeiss Intergraph Z/I Imaging multispectral Digital Mapping Camera (106 Mpixel all-digital system, integrated with Applanix GPS-INS POS-AV 510 – system value: around 1.2 M €). Main activities and duties:

- management, maintenance, GPS-INS boresight calibration, update of the DMC system;
- aerial survey project design and data acquisition (flight lines, flying height, photo in-track and across track overlapping parameters according to customer/technical offer requirements);
- base GPS mission planning for multi base differential GPS post-processing; DMC center trajectory computation and position correction;
- GPS trajectory inertial smoothing;
- geodetic survey design and planning;
- aerial triangulation and bundle block adjustment processing;
- customer technical support (testing commission, project manager, customer representatives).

01/2006 - 02/2006

contracts as professional engineer

- T6 Ecosystems, AXUM PROJECT, ETHIOPIA, AFRICA (UNESCO financed project, contract n° 4500029221): historical aerial photo orthorectification and DTM generation for the “Stele di Axum” area;
- Studio Geologia e Geotecnica, Pescara, Italy: consultancy services for GPS/Total Station survey. Feasibility study for cartographic positioning of wells for water quality monitoring in an industrial plant, Scarlino, Grosseto, Italy.

09/2005 - 02/2006

Tor Vergata University, Rome, contract

- “GPS survey design and data acquisition training course” for Civil Engineering students.

02/2005 - 01/2006

DITS Department, La Sapienza University, Rome

Contract for cooperation on Remote Sensing and Topographic Monitoring projects. Main duties:

- rock landslide topographic monitoring: one year of weekly displacement measurements with a Leica Total Station – Tor Giovannetto Quarry, nearby Assisi (Perugia, Umbria Region, Italy);
- Mt. Etna Volcano GPS survey: in a DITS Department Team and with INGV personnel, cooperation for GPS ground control points network design and surveying for aerial triangulation processing and bundle block adjustment of the photo centers – photogrammetric block of about 250 aerial images;

- High resolution DSM/DTM generation from LIDAR data captured over unstable slopes in Campania Region;
- Category 1 ESA project: in a INGV - CNR IREA - DITS team, worked on the validation of DINSAR ERS1/ERS2 terrain displacement and velocity maps computed with SBAS technique in the alpine region of Susa Valley, Piedmont, Italy.

03/2004 - 11/2005

contracts as professional engineer on official Research Projects

- Earth Sciences Department, G.d'Annunzio University, Chieti, Italy: two contracts for the research project Multitemporal DINSAR analysis of Fucino-Maiella-Adriatic Coast area, within the activities of a MIUR co-financed "Seismic Potential Estimate related to the Active Tectonic Structures correlated to extended gravitational movements in the Central-Southern region of the Appenines";
- CNR-IGAG (National Research Centre – Applied Geology and Geotechnics Institut) contract for a CNR-GNV research project: Digital Terrain and Marine Model (DTMM) generation/data integration for Stromboli, Vulcano, Ischia volcanoes (years 2000-2003 aerial photogrammetric surveys and bathymetric surveys data integration).

Research Experience**Remote Sensing projects, Surveying, Aerial Digital Photogrammetry and Lidar topographic mapping, DINSAR displacement validation**

- testing of GNSS-INS data for navigation, position and orientations system Applanix POS-AV 510, mainly used for aerial imagery Direct Georeferencing and airborne sensor/system orientation;
- validation of photogrammetric point measurements and DTMs, including DTMs coregistration, statistical analysis;
- DINSAR SBAS processing results analysis and validation
- large high resolution lidar DTM analysis and validation;

GNSS-INS systems Boresight Calibration

- GPS-INS calibration flight design, parameters stability analysis and QC.

Memberships**Accredited Engineer at "Ordine degli Ingegneri della Provincia di Roma"****Competence and Skills**

APPLANIX POSPAC 4.31 software for GPS-INS calibration and processing for airborne sensors/systems

- POSGPS, module for DGPS multibase sensor center trajectory computing;
- POSPROC, module for Smoothed Best Estimate Trajectory computing and statistical analysis;
- POSEO, module for IMAGE FRAME EXTERIOR ORIENTATION computing
- CALQC, module for:
 - GPS-INS boresight calibration,
 - optical lens calibration,
 - GPS-INS QUALITY quality control
 - point Measurement
 - aerial triangulation
 - bundle block adjustment
 - DATUM SHIFT computation

INTERGRAPH

- Z/I Mission for 3D aerial survey design;
- Image Station Mission Planning software for aerial survey design;
- ASMS, Airborne Sensor Management System, software for DMC operations;

TOPCON - PINNACLE

- software for GPS, D-GPS, D-GPS multi base static and kinematic processing and GPS geodetical network position computing and compensation;

SURFER 8, Golden Software

- sparse point XYZ data interpolation, gridding and analysis tool for surface generation and comparison;

LIDAR softwares

- USDA FUSION SOFTWARE for LIDAR data Analysis and Visualization
- ENVI LIDAR TOOL KIT
- TERRASCAN from TERRASOLID

THEMATIC MAPPING and GIS softwares

- ERmapper
- ENVI
- ArcGIS

Languages

- Italian (mother tongue)
- Polish (mother tongue)
- English (read, written and spoken: fluent)

Publications

Journal Papers (2)

- Wolski W., Bernardo E., De Angelis G., Marsella M., Sonnessa A., "Analisi delle prestazioni di un sistema multispettrale per aerofotogrammetria digitale: il rilievo del vulcano Stromboli, Marzo 2007" – ASITA 2009, accepted by the Scientific Committee;
- Wolski W., Marsella M., Tommasi P., "Applicazione della tecnica D-InSAR all'analisi delle deformazioni del versante sinistro della Val di Susa presso Pont Ventoux (TO)" - Atti 8^a Conferenza Nazionale ASITA "GEOMATICA, standardizzazione, interoperabilità e nuove tecnologie – Fiera di Roma, 14-17 Dicembre 2004, Roma, vol. II 1965-1970 – Relazione

Seminars/Conferences (3)

- Amato L., Antonucci G., De Angelis G., Wolski W., "Integrazione di dati laser scanner aerei e terrestri per lo studio di aree in dissesto", atti del "Laser Scanner 3D - incontro tecnico "Applicazioni del Laser Scanner per il rilievo di strutture e del territorio", presso Università degli Studi di Roma La Sapienza, Facoltà di Ingegneria, Via Eudossiana, 18, Aula del Chiosstro, Lunedì 9 Luglio 2007
- Wolski, W. "Studio delle deformazioni di un versante alpino in Val di Susa con tecnica D-InSAR: analisi di dati ERS-SAR per il periodo 1993-2000". III Giornata di Studio sulla Geoinformazione, Forum Università Lavoro 2005, Università Tor Vergata, (RM) Relazione e Poster.

- Marsella M., Nardinocchi C., Bernardo E., De Angelis G., Sonnessa A., Wolski W., "An high density airborne LIDAR survey in the urban area of Napoli" - Atti Laser Scanner 3D 1st European Optech Seminar – 8 - 9 Giugno 2005, Politecnico di Milano, Milano

Technical Reports (1)

- Witold Wolski, Responsible for the digital aerial surveys, Nuova Avioriprese S.r.l., "Boresight Angles Calibration for POS-AV 510 integrated on DMC system: 2007, June 15th, calibration flight over the Riviera dei Cedri test area, Scalea (CS) Italy" – prepared in July 2007 for prof. Livio Pinto, (DIAR, Politecnico di Milano), Head of the Testing and Quality Control Commission of the project: "Generation of Digital Cartography and Topographic Database at 1:5000 mapping scale – Calabria Region (Italy).

International Conference Papers (2)

- Bernardo E., De Angelis G., Marsella M., Nardinocchi C., Sonnessa A., Wolski W., "The generation of High Resolution LIDAR DTM and DSM for detecting and monitoring unstable areas", proceedings of the European Geosciences Union, 2006, Vienna, Austria - POSTER
- Atzori S., Manunta M., Lanari R., Marsella M., Wolski W., Tommasi P., "Long term DInSAR analysis of a deep seated gravitative motion in the Alpine region of Val Di Susa, Italy" – proceedings of the "FRINGE 2005 WORKSHOP" November 28th - December 2nd 2005, ESA-ESRIN Frascati (RM).