



INGEO2017

7th International Conference on Engineering Surveying

MONITORING
needs and solutions

Programme

Laboratório Nacional de Engenharia Civil
Portugal | Lisbon | October 18 - 20, 2017



Hour	Wednesday 18 th October	Thursday 19 th October	Friday 20 th October
9:00			
9:30	Opening session	TS4	TS7
10:00	PS1		
10:30		Coffee break	Coffee break
11:00	Coffee break		
11:30		PS3	PS5
12:00	TS1		
12:30		TS5	TS8
13:00			
13:30	Lunch	Lunch	Lunch
14:00	PS2	PS4	PS6
14:30			
15:00			
15:30	TS2	TS6	TS9
16:00			
16:30	Coffee break	Coffee break	Closing session
17:00	TS3		
17:30		Visit to Lisbon	
18:00	Poster		
18:30			
19:00			
19:30			
20:00			
20:30	Conference Dinner		
21:00			
21:30			

18th Oct., Wednesday

9h30

Opening Ceremony

10h00

PS1

Civil Engineering Structures / Terrestrial Laser Scanning

Chair: Wolfgang Niemeier

Do we need structural monitoring?

José Manuel Catarino

3D congruency – the point cloud problem

Thomas Wunderlich

Coffee Break

11h30

TS1

Monitoring of Civil Engineering Structures I

Chair: Rinaldo Paar

Co-chair: Teresa O. Santos

As-built documentation of anchor blocks of facade elements using TLS

Ján Erdélyi, Alojz Kopáček and Peter Kyrinovič

This is a peer reviewed paper

Combined use of non-destructive methods for the survey of facades anomalies of heritage buildings with structural concrete elements

José Dias, Luís Matias, Maria João Henriques, Maria Ribeiro and Teresa Santos

This is a peer reviewed paper

Estimation of wooden coefficient of expansion due to temperature and moisture with geodetic sensors

Annette Schmitt and Volker Schwieger

Determining the non-verticality of tall chimneys using the laser scanning approach

Aleš Marjetič and Gašper Štebe

This is a peer reviewed paper

Measurements of geometry of internal flues in multi-flue chimneys

Edyta Puniach

Lunch

14h00

PS2

Historical Buildings / Potential of Classical Methods

Chair: Thomas Wunderlich

Monuments and historic buildings: Applications and challenges in structural engineering

Paulo B. Lourenço

The potential of classical surveying methods for health care monitoring of large structures

Alojz Kopáček

15h00

TS2

Monitoring of Civil Engineering Structures II

Chair: Helena Cruz

Co-chair: Ján Erdélyi

Using IATS and digital levelling staffs for the determination of dynamic displacements and natural oscillation frequencies of civil engineering structures

Rinaldo Paar, Ante Marendic, Andreas Wagner, Wolfgang Wiedemann, Thomas Wunderlich, Miodrag Roic and Domagoj Damjanovic

This is a peer reviewed paper

Uncertainty evaluation of deflection measurements from FWD tests on road pavements

José Neves and Edgar Cardoso

This is a peer reviewed paper

Visual inspection automation with image processing

Ana Fonseca, Dora Roque, Maria João Henriques and José Muralha

Automated geodetic monitoring systems in new hydropower plants

Elisa Almeida, Daniel Pimentel, David Fernandes, Carlos Pestana and Ricardo Araújo

Assessment of cracks on concrete dams by image processing: the case-study of Itaipu dam, at the Brazil-Paraguay border

Jónatas Valença and Eduardo S. Júlio

This is a peer reviewed paper

Coffee Break

17h00

TS3

Monitoring of Historical Buildings

Chair: Paulo B. Lourenço

Co-chair: Peter Kyrinovič

Monitoring the behaviour of MEO Arena roof

Maria João Henriques, Helena Cruz, Dora Roque and Ana Fonseca

This is a peer reviewed paper

Displacement and surface pathology monitoring of former Tejo Power Station building by combining terrestrial laser scanning, micro-geodesy, photogrammetry and GIS

Adriano Oliveira, João Boavida and Bruno Santos

Vertical displacements of engineering structures during reconstruction: Classification and prediction models

Roman Shults

17h45

Poster Session

Chair: Alojz Kopáček

Trigonometric levelling at extremely short lines of sight

Zarko Nestorovic

Comparison of 3D laser scanning and classical survey data deformation analysis of industrial facilities in oil refinery

Almin Dapo, Luka Babic, Bosko Pribicevic and Antonio Antunovic

Point cloud classification and track centre determination in point cloud collected by MMS on rail

Elzbieta Pastucha

Three years of monitoring using leveling and hybrid gravimetry applied to the geothermal sites of Soultz-sous-Forêts and Rittershoffen, Rhine Graben, France

Gilbert Ferhat, Nolwenn Portier, Jacques Hinderer, Marta Calvo Garcia-Maroto, Yassine Abdelfettah and Umberto Riccardi

19h00

Dinner
(Travel by bus)

19th Oct., Thursday

9h00

TS4

Concepts, New Technology and Software Development I

Chair: Hans Neuner

Co-chair: Ante Marendic

Fusion of laser-scan and image data for deformation monitoring – Concept and perspective

Andreas Wagner, Wolfgang Wiedemann and Thomas Wunderlich

This is a peer reviewed paper

The influence of different LocataNet configurations on positioning accuracy

Igor Grgac, Rinaldo Paar, Ante Marendic and Ivan Jakopc

This is a peer reviewed paper

A new approach to long-distance EDM: using intermode beating of broadband ultrashort laser pulses

David Salido Monzú and Andreas Wieser

This is a peer reviewed paper

Synchronization routine for real-time synchronization of robotic total stations

Zan Gojcic, Slaven Kalenjuk and Werner Lienhart

This is a peer reviewed paper

Deformation monitoring in the Internet of Things. Implementation of a multi-platform software package for modern sensor networks in engineering geodesy

Philipp Engel

This is a peer reviewed paper

Coffee Break

11h00

PS3

Geotechnical Works / Ground Based Radar Interferometry

Chair: Ana Fonseca

The role of monitoring in geotechnical works

Ana Quintela

Potential of Space Based and Ground Based Radar Interferometry for Deformation Monitoring

Wolfgang Niemeier

12h00

TS5

Monitoring of Geological and Hydrological Hazards

Chair: Ana Quintela

Co-chair: Stella Pytharouli

Deformation monitoring of Kostanjek landslide in Croatia using multiple sensor networks and UAV

Ante Marendić, Rinaldo Paar, Hrvoje Tomić, Miodrag Roić and Martin Krkač

This is a peer reviewed paper

Geodetic monitoring of the Adroit landslide, Barcelonnette, French Southern Alps

Gilbert Ferhat, Jean-Philippe Malet, Anne Puissant, Delphine Caubet and Emilie Hubert

This is a peer reviewed paper

Multi-method monitoring of the large and rapidly developing Pas de l'Ours landslide - Queyras, France

Floriane Provost, Pierrick Bornemann, Elouan Faustin, Jean-Philippe Malet, Clément Hibert, Anne Puissant, Marc Fleck, Gilbert Ferhat, Pascal Diot and Vincent Ségel

Lunch

14h00

PS4

Maritime Structures / Augmented Reality

Chair: Teresa Reis

Application of stereo-photogrammetric methodologies to the design and monitoring of maritime structures

Conceição Juana Fortes

Virtual and Augmented Reality: from the Lab to the Wild

Alfredo Ferreira

15h00

TS6

Monitoring of Coastal Structures

Chair: Conceição Juana Fortes

Co-chair: José Nuno Lima

Towards a mobile monitoring tool for coastal structures inspection: The Ericeira rubble-mound breakwater test case

Rui Capitão, Alexandre Maia, Rute Lemos, Armanda Rodrigues and Conceição Juana Fortes

This is a peer reviewed paper

The monitoring of rubble mound breakwaters. An assessment of UAV technology

Maria João Henriques, Rute Lemos, Rui Capitão and Conceição Juana Fortes

This is a peer reviewed paper

The use of UAVs in engineering geological surveys: mapping along Scotland's south-west coast

Olympia Tziavou, Stella Pytharouli and Jock Souter

Survey of a two-dimensional scale model of a rubble-mound breakwater using different stereo-photogrammetric techniques

Rute Lemos, Maria João Henriques, António Muralha, Ricardo Jónatas, Conceição Juana Fortes and Rui Capitão

This is a peer reviewed paper

Coffee Break

16h30

Visit to downtown Lisbon

(Travel to the meeting point with the guides by subway)

20th Oct., Friday

9h00

TS7

Terrestrial Laser Scanning

Chair: Volker Schwieger

Co-chair: David Salido Monzú

Evaluating the freeform modelling of point clouds by means of a test specimen

Corinna Harmening, Gilles Teodori and Hans Neuner

This is a peer reviewed paper

Using point cloud comparisons for revealing deformations of natural and artificial objects

Christoph Holst, Lasse Klingbeil, Felix Esser and Heiner Kuhlmann

This is a peer reviewed paper

Geodetic surface based methods for applications in civil engineering

Claudius Schmitt, Benjamin Kromoser, Corinna Harmening, Johannes Falkner, Hans Neuner and Johann Kollegger

This is a peer reviewed paper

Simplicity is the New Black: The BLK360 Story

Vanda Kadlečíková

TLS Data Georeferencing - Error Sources and Effects

Jelena Pandžić, Marko Pejić, Branko Božić and Verica Erić

This is a peer reviewed paper

Coffee Break

11h00

PS5

Bridge Monitoring / GNSS Applications

Chair: Alojz Kopáček

Dynamic Response of Bridges and its Monitoring Needs

Milan Sokol

GNSS: tools to monitor a dynamic Earth

Virgilio Mendes

12h00

TS8

Radar Interferometry Applications

Chair: Heiner Kuhlmann

Co-chair: Dora Roque

The use of InSAR technology to monitor ground and structural displacements

Josep Raventos and Javier Garcia

This is a peer reviewed paper

Merging GBSAR and topographic surveys to measure pier deformations

Giovanni Nico, Andrea Di Pasquale, Gianluca Miccoli and Filippo Maria Soccodato

Ground based Synthetic Aperture Radar (GBSAR) interferometry: which advantages for the monitoring of concrete and earth-filled dams?

Giovanni Nico, Marco Corsetti, Alfredo Pitullo and Andrea Di Pasquale

Lunch

14h00

PS6

Concrete Dams / UAV Applications

Chair: José Catarino

The role of survey methods in the monitoring of concrete dams

Domingos Silva Matos

Assessing exposure of infrastructure to natural hazards using unmanned aerial systems: case studies from the Andes, Portugal, Antarctica and Cape Verde

Gonçalo Vieira

15h00

TS9

Concepts, New Technology and Software Development II

Chair: Gonçalo Vieira

Co-chair: Ján Erdélyi

Monitoring system using low cost GNSS sensors: first experiments and performance evaluation

Stefano Gandolfi, Luca Poluzzi and Luca Tavasci

A Bayesian procedure for analysis of short permanent GNSS baselines

José Nuno Lima and João Casaca

Systematic error elimination of inertial sensors using rotating platforms

Lubica Erdélyiová, Pavol Kajánek and Alojz Kopáček

Multi-sensor based augmented virtuality immersive technologies for large scale metrology applications

Theodoros Xenakis, Vassilis Gikas and George Kaisarlis

Assessment of accuracy of basic manoeuvres performed by an unmanned aerial vehicle during autonomous flights

Pawel Cwiakala

16h30

Closing Ceremony