XP-resilience

EXTREME LOADING ANALYSIS OF PETROCHEMICAL PLANTS AND DESIGN OF METAMATERIAL-BASED SHIELDS FOR ENHANCED RESILIENCE
http://r.unitn.it/en/dicam/xp-resilience

DEPARTMENT OF CIVIL ENGINEERING
SCHOOL OF ENGINEERING
UNIVERSITY OF PATRAS

Workshop Announcement

April 12-13, 2018
Structures Laboratory, Department of Civil Engineering, University of Patras

Seismic resilience of energy-supply infrastructures

The aim of the two-day workshop is to provide basic insight into seismic hazard and risk assessment of energy-supply infrastructures. The emphasis will be given on the ground motion predictive models, seismic analysis with soil structure interaction and probabilistic methods for risk assessment of structural and utility systems. Moreover, seismic hazard assessment of buried pipelines focusing both on structural and geotechnical aspects will be presented.
The workshop is organised by the Department of Civil Engineering, University of Patras, under the XP-RESILIENCE (ITN) project http://r.unitn.it/en/dicam/xp-resilience.

Thursday, April 12th

9:00 - 9:15		*Registration - Welcome*
09:15 - 11:00	Prof. A. Papageorgiou	*Basics of ground motion (Specific Barrier Model)*
11:15 - 13:00	Prof. D. Karabalis	*Seismic analysis of isolated/non-Isolated liquid storage tanks with/without soil structure interaction*
13:00 - 14:00		*Lunch break*
14:15 - 16:00	Prof. J. E. Padgett	*(to be announced)*
16:15 - 18:00	Prof. S. Karamanos	*Limits for the Seismic Design of Liquid Storage Tanks and Industrial Piping systems*
20:00		*Social Dinner*

Friday, April 13th

09:00-11:00		*Visit to Structures Laboratory / Rio-Antirio Bridge site*
11:15-13:00	Prof. V. Papadopoulos	*Vulnerability and Seismic risk Assessment of industrial plants: the project RASOR*
13:00-14:00		*Lunch break*
14:15-16:00	Prof. G. Bouckovalas	*Seismic hazard assessment of buried pipelines: Geotechnical aspects and seismic wave verification*
16:15-18:00	Prof. C. Gantes	*Seismic hazard assessment of buried pipelines: Structural aspects and large permanent ground displacement verification*

Lecturing body:

Prof. A. Papageorgiou

Department of Civil Engineering
University of Patras, GR

Prof. Apostolos S. Papageorgiou, professor in the Department of Civil Engineering at the University of Patras, in Patras, Greece. Prior to joining UP, he held appointments at Rensselaer Polytechnic Institute as Assistant Professor and Associated Professor and subsequently as Professor at the State University of New York at Buffalo. He received his Ph.D. in Earthquake Engineering and Engineering Seismology from the Massachusetts Institute of Technology (M.I.T.). He received all his other degrees (B.Sc. and M.Sc. in Civil Eng.; M.Sc. in Mech. Eng.) from M.I.T., and he is the recipient of the 'Richard Lee Russel Award' of 1976 of the Department of Civil Engineering, M.I.T. "in recognition of distinguished academic achievements." Dr. Papageorgiou's research interests lie in the areas of engineering seismology, earthquake engineering, structural dynamics (deterministic and stochastic), structural mechanics, and include the topics related to the mechanics of earthquake rupture, ground motion synthesis (both stochastic and deterministic), seismic hazard assessment, computational mechanics. He has served on the editorial board of the Engineering Mechanics and Structural Engineering Journals of the American Society of Civil Engineers (ASCE), he is on also on the faculty list of the ROSE School of the University of Pavia and he has an adjunct professorship appointment at the University of Iceland. He is the recipient of the Japanese Government Research Award for Foreign Specialists. He has served on a review panel for the National Research Council, U.S. National Academy of Sciences. Dr. Papageorgiou's research activities over the years have been funded by the U.S. National Science Foundation (N.S.F.), U.S. Geological Survey (U.S.G.S.), Alaska Science and Technology Foundation.

Prof. D. Karabalis

Department of Civil Engineering,
University of Patras, GR

Dr. Dimitris L. Karabalis is Professor at the Department of Civil Engineering of the University of Patras, Greece. He holds Diploma from the National Technical University of Athens (1977) and M.S. (1980) and Ph.D. (1984) degrees from the University of Minnesota. His academic appointments started at The Ohio State University (1983-84) and continued at the University of South Carolina (1984- 93) and then at the University of Patras (1993-date). He has also assumed research duties at the US Army Corp of Engineers, the University of Karlsruhe (Germany) and the Technical University of Kaiserslautern (Germany) and teaching duties at the Greek Open University. Parallel to his academic career he has collaborated with several engineering companies in the analysis and design of special projects, e.g. with the LPA Inc. on bridge analysis, design, evaluation and rating, the Gulfstream Aerospace on structural stability and dynamic analysis of fuselages, and the Greek Centre for Renewable Energy Sources as a consultant on static, dynamic, stability and fatigue analysis of wind turbine structures. His research interests are mainly focused on structural dynamics and earthquake engineering, with emphasis on numerical methods such as the boundary element method and the finite element method. He has served as a member of several professional committees in structural dynamics and computational mechanics and he is currently member of 4 editorial boards. He has published more than 100 papers in international refereed journals and conferences. His funded research lists 17 projects (principal or co-principal investigator) funded by several state and private agencies in the USA and the European Union, e.g. European Committee, Greek National Research Agency, Department of Energy (USA), etc.

Prof. J. E. Padgett

Department of Civil and Environmental Engineering, RICE University

Jamie E. Padgett is an Associate Professor in the Department of Civil and Environmental Engineering at Rice University in Houston, TX. Prof. Padgett's research focuses on the application of probabilistic methods for risk assessment of structures, including the quantification of infrastructure sustainability. Her work addresses the protection of structural infrastructure such as bridges or oil storage tanks exposed to multiple hazards, including earthquakes, hurricanes, or aging and deterioration. She has published over 150 articles in journals or archived conference proceedings in the general area of structural response, reliability and life-cycle assessment. Dr. Padgett was the founding Chair of the ASCE technical committee on Multiple Hazard Mitigation, and is an active member of several national technical committees within ASCE and TRB. She currently serves on editorial boards for the ASCE Journal of Bridge Engineering, Sustainable and Resilient Infrastructure, and Earthquakes and Structures. Dr. Padgett has received several awards and recognitions including the 2011 National Science Foundation Faculty Early Career Development (CAREER) Award and ASCE's 2009 New Face of Civil Engineering for her work in the field of infrastructure risk assessment and protection. She has also received several mentoring and teaching awards such as the 2014 Rice University Scholar Athlete Favorite Professor Award. Among other projects, Dr. Padgett currently works as a part of several large national or regional research efforts including the NIST Center of Excellence for Community Disaster Resilience (headquartered at Colorado State University), the NSF NHERI Cyberinfrastructure "DesignSafe-CI" (headquartered at University of Texas, Austin), and the Severe Storm Prediction Education and Evacuation from Disasters (SSPEED) Center (headquartered at Rice University).

Prof. S. Karamanos

Professor of Mechanical Engineering, University of Thessaly, Volos, Greece

Chair of Structural Engineering, The University of Edinburgh, Scotland , UK

Prof. S. Karamanos, is the Chair of Structural Engineering, at the School of Engineering, The University of Edinburgh, since August 2016. He is also a Professor of Computational Structural Mechanics at the University of Thessaly, Greece, at the Department of Mechanical Engineering.

Dr. Karamanos holds a Diploma in Civil Engineering from the National Technical University of Athens, Greece (1989), and received his PhD in Structural Engineering from The University of Texas at Austin, USA (1993).

He teaches courses in Structural Mechanics and Finite Element Methods. Prof. Karamanos specializes in structural mechanics and integrity of energy infrastructure systems, with emphasis on steel structures. His research interests focus on buckling and fatigue of pipelines and offshore structures, mainly tubular components and systems, using computational (finite element) methods, and experimental testing. His research has been funded primarily by European research projects, with the participation of European steel and pipeline industry. He has published more than 180 papers in refereed journals and conference proceedings.

Prof. V. Papadopoulos

School of Civil Engineering,
National Technical University
of Athens, GR

Prof. V. Papadopoulos has more than 15 years academic and research record. His main research body focuses on probabilistic computational mechanics in which he has contributions in the area of reliability analysis and stochastic finite element methods. Starting in 1995, he has published papers in peer reviewed journals and conference proceedings. His publications are related to imperfection sensitive structures and he has proposed various methodologies for the treatment of imperfections as well as other types of model uncertainties, in a rational probabilistic context. Recently, he proposed a novel methodology for the accurate estimation of narrow-band stochastic fields, such as initial imperfections, enabling for modeling imperfections from existing data which is a major effort in the project undertaken related not only to the description of initial imperfections of industrial facilities but also to their stochastic analysis. He also has significant contributions in the fields of reliability and seismic vulnerability analysis with a number of research papers in peer reviewed journals on the aforementioned topics. During his PhD (1996) he developed a novel Neural Network–based reliability analysis methodology). As recognized expert in the area of Computational Stochastic Mechanics, member of the International Association of Structural Safety and Reliability (IASSAR), he is a regular reviewer scientific journals, has co-organized the Second South-East European Conference on Computational Mechanics, SEECCM 2009 and is member of the organizing committee of the Computational Methods in structural Dynamics and Earthquake Engineering COMPDYN 2009 and 2011conferences.

Prof. C. Gantes

School of Civil Engineering,
National Technical University
of Athens, GR

Prof. C. Gantes, obtained a Civil Engineering Diploma from the National Technical University of Athens (NTUA) in 1985, and a Master's (1988) and Ph.D. (1991) from the Massachusetts Institute of Technology (MIT). Since 1994 he is faculty member in the Institute of Steel Structures at NTUA, where he is teaching steel structures, structural stability and tension structures. His current research activity is in the area of structural behavior, analysis and design under extreme loads, including seismic, wind and blast, leading structures to nonlinear response, with emphasis on steel structures. He is author of one book in English, on deployable structures, and three books in Greek, on design of unconventional steel structures, structural stability and tension structures. He is also author of 10 book chapters, 75 peer-reviewed journal papers and 140 conference papers. His research work has received more than 850 citations. In addition, he is active in structural design and consulting, having participated in design projects of the steel roofs of three major Greek football stadiums, structures for the 2004 Athens Olympic Games, buried pipelines transporting oil and natural gas, underground structures including tunnels and stations for the Athens subway, transmission towers, guyed towers, wind turbine towers, port, marine and industrial facilities projects, while recently he consulted for the seismic design of the steel gates for the New Panama Canal.

Prof. G. Bouckovalas

Department of Geotechnical
Engineering,
National Technical University
of Athens, GR

Prof. G. Bouckovalas obtained a Civil Engineering Diploma from the National Technical University of Athens (NTUA) in 1978, and a Master's (1981) in Civil Engineering, Mass. Inst. of Technology (M.I.T.), Cambridge, MA, U.S.A. and Ph.D. (1982) from the Massachusetts Institute of Technology (MIT). Since 1987 he is faculty member of Geotechnical Earthquake Engineering at NTUA, where he is teaching Soil Mechanics, Soil Dynamics, Special Topics in Geotechnical Engineering, Computational Methods in Geotechnics. Detailed information can be find on his online resume http://users.ntua.gr/gbouck/resumes.shtml

Registration

Please register by compiling and sending via email to the Workshop Secretariat (Mrs. M. Dimitriadi, mdimitr@upatras.gr) the Registration Form (at the end of this document). A registration fee of 220 EUR applies.
Along with your Registration Form, please attach the bank transcript of deposited amount.
The deadline for the registration is **March 20th, 2018**

Venue

The workshop will be held at the **Department of Civil Engineering of the University of Patras**. (see map here) The Department is located in the University Campus of Rio, 8km from the city of Patras.

Accommodation

There are plenty of hotels downtown Patras. Although one may find hotels closer to the University, there is no easy transportation to reach the Campus for the Workshop and the rest activities. The organizers will provide transportation bus from the main train station at Patras to the Workshop venue– the same applies for all other activities. Please do not hesitate to contact us if you need further advice.

From Athens airport to Patras

Arriving by plane, you land at the 'Eleftherios Venizelos' International Airport of Athens, located north-east of Athens. Patras is 220km west of Athens and can be reached from the airport via train, coach or car.

Upon landing at the Athens Airport, you may opt for one of the following alternatives to arrive at Patras:

Option A – taking the train (recommended).
Trains depart from the train terminal (it serves both the Metro line to downtown Athens as well as the Suburban line towards Kiato-Patras) at the airport, located outside the airport terminal (indicated by red arrow in the attached map) and across on the departures level. You need to purchase your ticket at the kiosk inside the terminal. Your first ride will be from the Airport to "Kato Acharnai" stop and from there change train towards "Kiato".
The train final stop is at "Kiato" (name of the city, 100km from Patras) and from there on one continues by bus on the same ticket. Buses are waiting just in front of the "KIATO" station. It takes about an hour from Kiato to Patras and the final stop is at the main train station, downtown Patras. Most hotels in the city are within walking distance from there.

Option B – taking the bus.
Take the local bus (No. X93), just outside the main terminal building (arrivals level), where there is a kiosk selling tickets (ticket price 5,00€ - the same ride by taxi may cost ~€40.). Remember to validate your ticket at the one of the machines (orange) in the bus.
The bus will take you to in Athens to 'KIFISSOS BUS STATION' (on average 50min trip) where you need to switch bus to Patras. You need to buy a new ticket in the large hall, inside the main station building. Buses to Patras run every 30 minutes (last one on 22:30) and the cost of a one-way ticket is 20,70€. In total, allow for approx.. 3hrs from Athens to Patras. In Patras, you get off at 'PATRAS KTEL BUS STATION', 100m frm the train station, downtown Patras.

Option C – rent a car
From the airport one takes the "ATTIKI ODOS" highway towards "ELEFSINA" (heading west). Patras is 220km and the cost of the tolls is approximately €14 (one-way).

Workshop

Seismic resilience of energy-supply infrastructures.

Patras, April 12-13, 2018

Organised by ***Structures Laboratory, University of Patras***

REGISTRATION FORM

Please type or fill in block letters and e-mail together with payment evidence to:

Workshop Secretariat
(attn.: Mrs M. Dimitriadi)
Department of Civil Engineering
University of Patras,
Tel. +30 2610 997660
E-mail: mdimitr@upatras.gr

Delegate name, affiliation and contact details:

Prof. ☐ Dr. ☐ Mrs. ☐ Mr. ☐

Last (Family) name: _____

First (Given) name: _____

Organization: _____

Address (Street and number or P.O. Box): _____

City, State, Postal (zip) code: _____ .

Country: _____

Phone: _____ e-mail: _____

Select to whom the invoice for the registration fee to be issued to:

☐ my personal data

☐ other (please provide data of Organization, address, VAT)

_____

_____

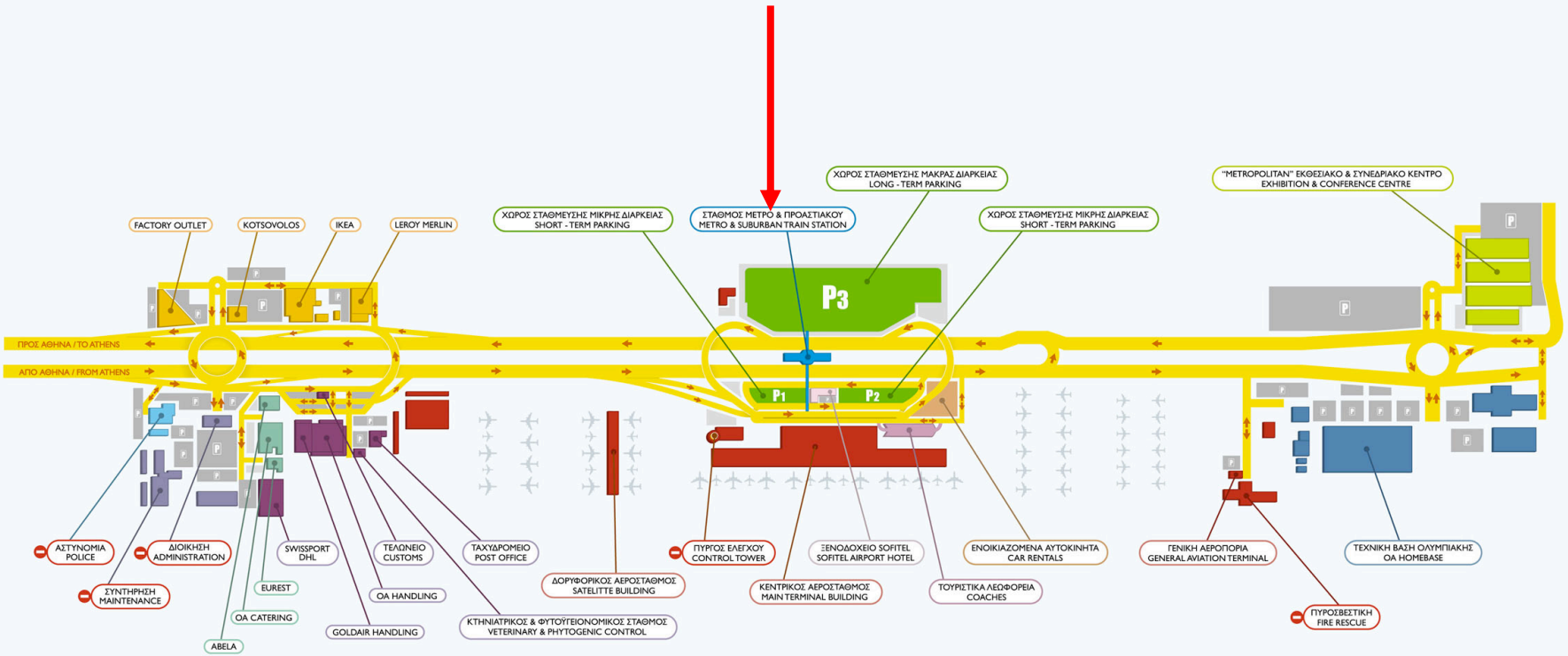
Payment:

Bank transfer to: NATIONAL BANK OF GREECE (Swift Code **ETHNGRAA**) Account number: **229 54000232**
IBAN: GR60 0110 2290 0000 2295 4000 232 (account holder: RESEARCH COMMITTEE, UNIVERSITY OF PATRAS)

Payment should be net of bank handling charges.

Please add your name and **"XP-RESILIENCE"** in reference space and attach to this form a copy of the bank transaction

AIRPORT MAP


FACTORY OUTLET
KOTSOVOLOS
IKEA
LEROY MERLIN
ΧΩΡΟΣ ΣΤΑΘΜΕΥΣΗΣ ΜΙΚΡΗΣ ΔΙΑΡΚΕΙΑΣ
SHORT - TERM PARKING
ΣΤΑΘΜΟΣ ΜΕΤΡΟ & ΠΡΟΑΣΤΙΑΚΟΥ
METRO & SUBURBAN TRAIN STATION
ΧΩΡΟΣ ΣΤΑΘΜΕΥΣΗΣ ΜΑΚΡΑΣ ΔΙΑΡΚΕΙΑΣ
LONG - TERM PARKING
ΧΩΡΟΣ ΣΤΑΘΜΕΥΣΗΣ ΜΙΚΡΗΣ ΔΙΑΡΚΕΙΑΣ
SHORT - TERM PARKING
"METROPOLITAN" ΕΚΘΕΣΙΑΚΟ & ΣΥΝΕΔΡΙΑΚΟ ΚΕΝΤΡΟ
EXHIBITION & CONFERENCE CENTRE
P3
P1
P2
ΠΡΟΣ ΑΘΗΝΑ / TO ATHENS
ΑΠΟ ΑΘΗΝΑ / FROM ATHENS
ΑΣΤΥΝΟΜΙΑ
POLICE
ΔΙΟΙΚΗΣΗ
ADMINISTRATION
SWISSPORT
DHL
ΤΕΛΩΝΕΙΟ
CUSTOMS
ΤΑΧΥΔΡΟΜΕΙΟ
POST OFFICE
ΔΟΡΥΦΟΡΙΚΟΣ ΑΕΡΟΣΤΑΘΜΟΣ
SATELITTE BUILDING
ΠΥΡΓΟΣ ΕΛΕΓΧΟΥ
CONTROL TOWER
ΞΕΝΟΔΟΧΕΙΟ SOFITEL
SOFITEL AIRPORT HOTEL
ΕΝΟΙΚΙΑΖΟΜΕΝΑ ΑΥΤΟΚΙΝΗΤΑ
CAR RENTALS
ΓΕΝΙΚΗ ΑΕΡΟΠΟΡΙΑ
GENERAL AVIATION TERMINAL
ΤΕΧΝΙΚΗ ΒΑΣΗ ΟΛΥΜΠΙΑΚΗΣ
OA HOMEBASE
ΣΥΝΤΗΡΗΣΗ
MAINTENANCE
EUREST
OA HANDLING
ΚΕΝΤΡΙΚΟΣ ΑΕΡΟΣΤΑΘΜΟΣ
MAIN TERMINAL BUILDING
ΤΟΥΡΙΣΤΙΚΑ ΛΕΩΦΟΡΕΙΑ
COACHES
OA CATERING
GOLDAIR HANDLING
ΚΤΗΝΙΑΤΡΙΚΟΣ & ΦΥΤΟΫΓΕΙΟΝΟΜΙΚΟΣ ΣΤΑΘΜΟΣ
VETERINARY & PHYTOGENIC CONTROL
ABELA
ΠΥΡΟΣΒΕΣΤΙΚΗ
FIRE RESCUE