



**IUSS**  
Scuola Universitaria Superiore Pavia



CAR - Collegio  
Cardinale Agostino Riboldi



Università degli Studi  
di Pavia

# THE FIFTH INTERNATIONAL NIGEL PRIESTLEY SEMINAR

**COLLEGIO CARDINALE AGOSTINO RIBOLDI**  
Pavia, Italy  
23-24 May 2019

# UME

understanding  
and managing  
e x t r e m e s



**EUCENTRE**  
FOR YOUR SAFETY.

The Graduate Training and Research in Understanding and Managing Extremes (UME) is an exciting development of the University School for Advanced Studies IUSS Pavia ([www.iusspavia.it](http://www.iusspavia.it)), a higher education institution in Italy that offers international advanced graduate programmes (Masters and Doctorate). Innovative, internationally planned, open minded, grown on the traditionally fertile soil of the University of Pavia, and based on a system of Colleges unique in Italy, IUSS prepares brilliant individuals to take on the most challenging and demanding public and private positions in contemporary Italy, Europe and the rest of the world. In this framework, the UME graduate programmes are geared towards the evaluation of uncertainties, risk mitigation and emergency management. The key objective is to provide a system within which Masters and Doctoral candidates can study, understand and deal with extreme events. The UME programmes currently address three main areas:

- Disaster risk assessment, focusing mainly on natural hazards such as earthquakes, hurricanes, fires, landslides and floods (with possible extensions to the topics of climatology, desertification, human-made and technological risks, etc.)
- Engineering for risk mitigation, which includes topics on engineering to increase the capacity of buildings and infrastructure to withstand the demands from extreme events.
- Extreme situation management, which includes topics of statistics and probability, law, economics, resource management, finance, insurance, sociology, ethics, psychology and medicine.

Courses are intensively taught in periods of one to four weeks, during which the respective lecturer is able to fully dedicate his/her time exclusively to the scholastic activities at the school, thus ensuring teaching and research training at the highest possible level of quality. All of the above endows a truly unique character to the UME programmes, be it for their fully international nature or for their innovative organisation. Currently, jointly with the University of Pavia, IUSS runs the MSc in Civil Engineering for Mitigation of Risk from Natural Hazards, featuring two curricula: Reduction of Seismic Risk (ROSE) and Hydrogeological Risk Mitigation (HYRIS). At the PhD level, both the institutions run the PhD in Understanding and Managing Extremes, featuring also two curricula: Earthquake Engineering and Engineering Seismology and Weather, Geological, Chemical and Environmental Risk.

## **INTERNATIONAL NIGEL PRIESTLEY SEMINAR**

As a part of the School's activities, an International Seminar is organised every year, to provide Master and PhD students with an opportunity to present and discuss their research work to an audience of international experts. The Seminar is named in honour of Prof. Nigel Priestley, co-founder of the ROSE School in 2001.

In addition to standard presentations on research work carried out within the Programmes of the School, the annual Seminar features also the tradition of inviting a prominent scientist to deliver a keynote lecture on a given contemporary and highly relevant topic in the field of Earthquake Engineering and Engineering Seismology. At this year's event, the keynote address entitled "Earthquake Analysis, Design and Safety Evaluation of Concrete Dams" will be delivered by Professor Anil K. Chopra, Emeritus Professor at the University of California, Berkeley.

The Seminar will also include the UME Doctoral Defence, featuring a Committee of independent international experts in charge of the examination.

## **ATTENDING THE EVENT**

In addition to UME faculty and students, a maximum of 50 external participants may also be accepted, for which professionals and researchers worldwide are encouraged to take part in the event. A 160€ fee is required from external attendees, to cover for the cost of coffee/lunch breaks and seminar dinner. Special financial conditions are in place for external university researchers or students, to whom a fee of 120€ is usually requested. Those who wish to attend the Seminar are kindly invited to compile and submit a registration form to the UME Secretariat, at the address given overleaf. If you need assistance of any kind (registration form, accommodation, travelling directions, etc.), please do not hesitate in contacting our staff at [secretariat@iusspavia.it](mailto:secretariat@iusspavia.it)

## **VENUE**

Pavia is a historical town in the North of Italy (35km from Milan), full of University tradition. The Seminar itself will take place at the Collegio Riboldi, a landmark structure dating back to the second half of the seventeenth century, purposely refurbished to serve as an international hosting facility for postgraduate students and visiting scholars working in the field of natural risk mitigation. It is located in the centre of Pavia, in Via Luigi Porta, 10.

## SEMINAR PROGRAMME

Thursday, 23<sup>th</sup> May

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14.30-15.00 Registration

15.00-16.15 **Session 1**

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Contributions to the Development of Elemental Viscous Damping Models

N.A. Clemett<sup>2</sup>

Seismic Performance of Steel Moment-Resisting Frame Retrofitted with Linear and Nonlinear Viscous Dampers

B. Chalarca Echeverri<sup>1</sup>

Seismic Retrofit of School Buildings in Italy: A Performance Evaluation and Loss Estimation

W.W. Carolis Gallo<sup>3</sup>

16.15-16.45 *Coffee break*

16.45-18.00 **Session 2**

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Simplified Seismic Assessment of Infilled RC Frame Structures

A.M.B. Nafeh<sup>3</sup>

Torsional Shear Response of Unreinforced Clay Masonry

S. Sharma<sup>1</sup>

Shake-table Validation of a Timber Retrofit System for Cavity-Wall Unreinforced Masonry Buildings

M. Miglietta<sup>1</sup>

19.30-23.30 *Seminar Dinner*

Friday, 24<sup>th</sup> May

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9.30-11.00 **Session 3**

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Probabilistic Scenario-Based Performance Assessment of Tall Buildings in Istanbul via Physics-Based Ground Motion Simulations

O. Odabasi<sup>1</sup>

Numerical Investigations of the Collapse of the Polcevera Viaduct, Genova

N. Scattarreggia<sup>1</sup>

Vs-based Assessment for Microzoning the Liquefaction Risk: the Case Study of the Urban Center of Cavezzo in Emilia-Romagna Region (Northern Italy)

P. Suroyo<sup>2</sup>

Seismicity Induced by Wastewater Disposal in Oklahoma

I. Grigoratos<sup>1</sup>

11.00-11.30 *Coffee break*

11.30-13.00 **Session 4**

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UME Doctoral Defence

Towards Probabilistic Seismic Risk Assessment Accounting for Seismicity Clustering and Damage Accumulation

A. Papadopoulos<sup>1</sup>

Probabilistic Loss Assessment Due to Earthquake-Induced Ground Failure

C. Yilmaz<sup>1</sup>

13.00-14.30 *Lunch break*

14.30-16.30 **Session 5**

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Keynote Lecture - Earthquake Analysis, Design and Safety Evaluation of Concrete Dams

A.K. Chopra

Overview of 2018-2019 Eucentre Activities

Graduation Ceremony

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<sup>1</sup> PhD Student, <sup>2</sup> Master Student, <sup>3</sup> MEEES Alumnus

## FACULTY

Aiming at a unique diversity of teaching and research training, in addition to the local faculty, the organisation of the MSc and PhD Programmes benefits from the short permanence of scholars with extremely high qualification. Indeed, all the visiting lecturers who have contributed in the past or are presently contributing to the UME programmes are internationally recognised experts in their field, coming from a number of distinguished institutions:

### UME Faculty

N. Abrahamson	S. Figini	A. Pavese
S. Akkar	A. Filiatrault	A. Pecker
R.J. Archuleta	B. Folz	M. Pender
A. Aref	P. Franchin	F. Perugia
F. Auricchio	P. Gamba	J. Pettinga
B.B. Basbug-Erkan	L. Garrido	R. Pinho
P. Bazzurro	M.C. Griffith	P.E. Pinto
J. Berrill	P. Gülkan	V. Poggi
K. Beyer	R. Hermann	C. Prato
J.J. Bommer	S. Hochrainer-Stigler	J.H. Prevost
G. Boni	G. Holland	G.A. Rassati
F. Bonilla	T.J.R. Hughes	E.M. Rathje
D.M. Boore	H. Igel	A. Reali
A. Borio di Tigliole	E. Kausel	M. Regester
R. Boroschek	E. Kavazanjian	J. Restrepo
F. Brezzi	K. Kawashima	B. Reynolds
C. Burton	T. Kokusho	G. Rix
M. Cagnazzo	M.J. Kowalsky	R. Rudari
G.M. Calvi	S.L. Kramer	D. Sarigiannis
P. Calvi-Pariseti	C.G. Lai	J. Schneider
A. Carr	D. Lallemand	C. Scholz
R. Carrilho Gomes	F. Laurini	J.F. Semblat
G. Castellano	D. LeBoeuf	V. Silva
C. Christopoulos	R. Leon	D. Slejko
M. Cocco	C. Lovadina	E. Spacone
M.P. Collins	A. Loretto	P. Stafford
J. Conte	R. Madariaga	J.F. Stanton
F. Crisafulli	G. Magenes	D. Stephenson
H. Crowley	R. Mechler	J.P. Stewart
M. Cubrinovski	B. Mihaylov	H. Sucuoglu
V. Curie	A. Mira	T. Sullivan
L. Danciu	E. Miranda	J. Swanson
A. Dazio	R. Monteiro	L. Tamellini
M. De Clerck	A. Monti	A. Taramelli
F. Dell'Acqua	G. Monti	E. Todini
G. Della Corte	F. Naeim	T. Triantafillou
K. Demeter	M. Nakashima	C.M. Uang
A. Der Kiureghian	S. Nielsen	G. Valensise
R. DesRoches	M. Osborne	D. Vamvatsikos
R. Eguchi	Y. Okuyama	P. Venini
A. Elgamal	G. O'Reilly	K. Verosub
A.Y. Elghazouli	S. Otani	P.L. Vidale
A. Elnashai	M. Pagani	R. Vitolo
M. Erdik	S. Pampanin	S. Winterstein
E. Faccioli	R. Paolucci	B. Yekeler
M.N. Fardis	A.S. Papageorgiou	B. Youngman
E. Ferrero	A. Parodi	S. Zatti
G.L. Fenves	P. Paultre	

IUSS Pavia is the last step of a long lasting higher education process started on 825 when King Lotharius appointed Pavia, the ancient capital of the Lombard kingdom, as the site for higher education of his kingdom. This process went through the foundation in 1361 by Emperor Charles IV of the Studium Generale later on named University of Pavia. The first Colleges for university students were established in the 15th and 16th centuries. They are now 15 offering, to the almost 2.000 students, a unique opportunity of study and cultural enrichment in a multidisciplinary and multiethnic environment. Through the centuries University of Pavia became one of the leading institutions in Europe.

IUSS fulfils, since 1997, an advanced teaching and research model successfully implemented by other prestigious institutions in Italy, like Scuola Normale Superiore and Scuola Sant'Anna in Pisa. Due to the completeness of its education and training fields, which allows a strong interdisciplinary approach, the mission of IUSS is that of contributing to the growth of a small number of selected students by offering them, at any step of their higher education, qualified programmes enhancing their capabilities and knowledge. The Institute is also committed to scientific progress by preparing young researchers and developing scientific research programmes.

## **CONTACTS**

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**Erasmus+**

The European Commission has approved and financed within the Erasmus Plus the Masters on Earthquake Engineering and Engineering Seismology (MEEES), coordinated by IUSS Pavia and featuring also the participation of University of Grenoble Alpes (France), University of Patras (Greece) and Middle East Technical University (Turkey), which aims to enhance quality in European higher education and to promote intercultural understanding through co-operation with Partner Countries.