

EERI EARTHQUAKE ENGINEERING RESEARCH INSTITUTE

WEB SITE: WWW.EERI.ORG

STUDENT CHAPTER

Cos'è EERI??



Earthquake Engineering
Research Institute

- ◎ EERI è il principale istituto americano nel campo della *SISMICA*.
- ◎ 2500 membri USA + 60 stati nel mondo (professionisti e ricercatori)

Fornire strumenti per la riduzione del rischio sismico avvalendosi delle più avanzate tecniche e tecnologie.

WEBSITE: www.eeri.org



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Latest Earthquakes

- M 7.2 Kepulauan Talaud, Indonesia (11/02/09)
- M 6.1 Costa Rica 08/01/09
- M3.9 Yellowstone Swarm (Wyoming USA) 26/12/08 - 08/01/09
- M 7.6, 7.4 Papua, Indonesia (offshore) 03/01/09
- M 6.4 Baluchistan, Pakistan 28/10/08
- M 6.6 Kyrgyzstan 05/10/08
- M 6.9 Eastern Honshu, Japan 13/06/08
- M 6.3 Greece (offshore) 08/06/08
- M 7.9 Wenchuan, China 12/05/08
- M 6.0 Nevada, USA 21/02/08

Latest News

- Register for Soil Liquefaction During Earthquakes Technical Seminar
- Call for Papers: 9th U.S. National and 10th Canadian Conference on Earthquake Engineering
- Election Results: Anderson and DesRoches Elected to Board of Directors
- Tubbesing to Step Down: EERI Is Searching for an Executive Director
- New Subscribing Members: Arup, Applied Technology Council, Jacobs

Platinum & Gold Subscribing Members



Other Subscribing Members

at FM Global Forell/Elsesser Engine

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Register for Soil Liquefaction During Earthquakes Technical Seminar

Register now for a day-long seminar to be given in four cities by I. M. Idriss and R. W. Boulanger, authors of the recently published EERI monograph sent to all members in 2008, *Soil Liquefaction During Earthquakes*.

Last Updated (Monday, 23 February 2009)

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Call for Papers: 9th U.S. National and 10th Canadian Conference on Earthquake Engineering

- ◎ EARTHQUAKE ENGINEERING RESEARCH
INSTITUTE MITIGATION CENTER:

Centro di Informazione sulle modalità di riduzione dei danni causati dai terremoti.

Materiale messo a disposizione da organizzazioni e centri di ricerca di livello mondiale.

◎ LEARNING FROM EARTHQUAKES



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Home ► Reconnaissance Activities ► China ► M 7.9 Wenchuan, China 12/05/08

M 7.9 Wenchuan, China 12/05/08


May 12, 2008
Monday, May 12, 2008, 14:28:01 local time

USGS Bulletin | USGS Earthquake List for 2008
RECONNAISSANCE ACTIVITIES

Wenchuan, China, Earthquake: EERI and GEER Collaborate on Sending Team to China to Bring Back Lessons for the U.S.

A team of earthquake researchers, sponsored by the Earthquake Engineering Research Institute (EERI) and the Geo-Engineering Earthquake Reconnaissance (GEER) Association, will join Chinese colleagues in investigating and documenting scientific and engineering effects of the devastating earthquake (magnitude 7.9) that occurred in Wenchuan County, China, on May 12, 2008. The research team, under the leadership of Marshall Lew of MACTEC Engineering and Consulting in Los Angeles, California, includes experts in structural, lifelines, and geotechnical engineering as well as disaster response and recovery.

The EERI/GEER team members have completed their investigations and have all returned safely to the US. On October 7, 2008 EERI's Southern California Chapter presented a **Technical Briefing on the Wenchuan Earthquake**. [Click here to download the briefings and presentation slides.](#)



Learning From Earthquakes

- [Introduction to LFE](#)
- [Reconnaissance Activities](#)
- [Team Member Applications](#)
- [Investigation Field Guide](#)
- [EQ Data Collection](#)
- [Field Investigation Forms](#)
- [CA Clearinghouse](#)
- [Virtual Disaster Viewer](#)

Latest Earthquakes

- [M 7.2 Kepulauan Talaud, Indonesia \(11/02/09\)](#)
- [M 6.1 Costa Rica 08/01/09](#)
- [M3.9 Yellowstone Swarm \(Wyoming USA\) 26/12/08 - 08/01/09](#)
- [M 7.6 Java Indonesia 07/01/09](#)



中国地震局工程力学研究所

Institute of Engineering Mechanics, China Earthquake Administration

A Quick Review on Wenchuan Earthquake

Zifa Wang, Baitao Sun

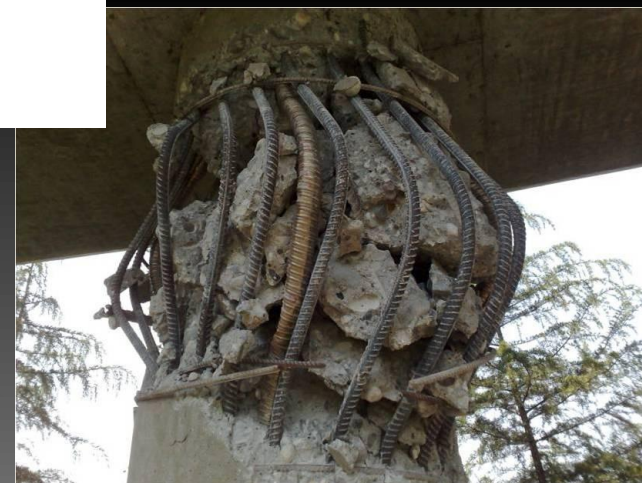
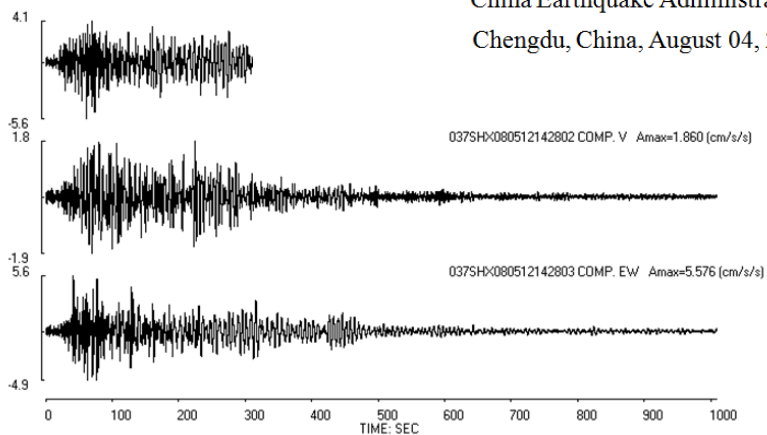
Junwu Dai and Shanyou Li

Institute of Engineering Mechanics,


China Earthquake Administration

Chengdu, China, August 04, 2008


080512142804 08-05-12 14:28:04 BTM
STATION: 375HX 36.240N 115.690E
NO. OF POINTS: 202000 EQUALLY
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◉ WORLD HOUSING ENCYCLOPEDIA



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World Housing Encyclopedia (WHE)
an Encyclopedia of Housing Construction in Seismically Active Areas of the World


hosted by the *Earthquake Engineering Research Institute (EERI)* and
the *International Association for Earthquake Engineering (IAEE)*

Goals
To share knowledge on housing construction practices
To encourage use of earthquake-resistant technologies
To develop guidelines & technical resources for improving seismically vulnerable construction
To offer services & technical support to communities across the world on earthquake resistant housing technologies



Risk Management Solutions to support Confined Masonry Network


Risk Management Solutions (RMS) has given EERI a grant to support activities of a new initiative, the Confined Masonry Network. This network has two major objectives: to improve the design and construction quality of confined masonry where it is currently in use; and to introduce confined masonry in areas where it can reduce seismic risk. (Photo to right shows undamaged confined masonry house in 2008 Wenchuan, China, earthquake [Build Change]).



more >>

New Report on Minifalda construction in Nicaragua


A new report on vivienda de minifalda construction in Nicaragua has been prepared by authors Dominik Lang, Alvaro Amador, Lisa Holliday, Claudio Romero López and Armando Ugarte. This construction type represents about 10% of the housing stock in the country and can be vulnerable in earthquakes because of its heavy roofs. Click on Housing Reports/Find Report and then Nicaragua on the left hand menu to read the details.



more >>

NEW Editor-in-Chief

Andrew Charleson, associate professor and structural engineer, in the School of Architecture at Victoria University of Wellington, New Zealand, has recently been appointed Editor-in-Chief of the WHE, taking over from Professor C.V.R. Murty who has recently taken a new and challenging assignment to help create a new IIT in Hyderabad.



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- ✕ Organizzazione seminari internazionali
- ✕ Possibilità di invitare ricercatori e specialisti stranieri
(Friedman Family Visiting Professional Program)
- ✕ Contatti con le università americane esperte nel settore dell'ingegneria sismica
(California Institute of Technology, State University of New York, Buffalo, University of California, Berkeley, University of California, San Diego, University of Illinois, Urbana-Champaign, University of Nevada, Reno...)

Student Chapter EERI



Earthquake Engineering
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- ✕ Abbonamento a **Earthquake Spectra**, rivista ufficiale dell'istituto
- ✕ Mensile newsletter EERI
- ✕ Opportunità di partecipare a comitati tecnici e progetti in ambito sismico
- ✕ Disponibilità di borse di studio e sconti per la partecipazione a conferenze EERI



- ✕ Partecipazione alle competitions
(paper-graphic-design)

PoliTo Student Chapter



Earthquake Engineering
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- Statuto:

EERI PoliTo Student Chapter Constitution for the EERI PoliTo Student Chapter

Earthquake Engineering Research Institute Student Chapter at the Polytechnic of Turin

Constitution

Article I – Name of Organization

This organization shall be EERI (Earthquake Engineering Research Institute) Student Chapter at the Polytechnic of Turin, hereafter referred to as EERI PoliTo Student Chapter.

Article II – Affiliation

This organization is affiliated with the Earthquake Engineering Research Institute –EERI–, a National Organization whose Headquarters' address is given below:

EARTHQUAKE ENGINEERING RESEARCH INSTITUTE

499 14th Street, Suite 320

Oakland, CA 94612-1934

Phone: (510) 451-0905

Fax: (510) 451-5411

Email: eeri@eeri.org

Website: <http://www.eeri.org>

The Earthquake Engineering Research Institute was founded in 1948 and is the principal national non-profit society of engineers, geoscientists, architects, planners, public officials and social scientists concerned about earthquakes and their effects.

Article III – Objectives

The objectives of the EERI PoliTo Student Chapter, a non-profit academic-professional association, are in agreement with those of the parent organization, and shall be:

PoliTo Student Chapter

Constitution for the PoliTo Student Chapter of EERI (2)

- To contribute to the advancement of the science and practice of earthquake engineering;
- To develop organization capacities at all levels of the university community to work in a coordinated fashion to prepare for, response to, and to recover from earthquake events in order to mitigate social and economic disruption that would occur in a community due to a destructive earthquake;
- To sponsor educational seminars and conferences which provide opportunities among students, researchers and professors to exchange knowledge on earthquake hazard reduction;
- To encourage students to research in the field of Earthquake Engineering and related disciplines;
- To exchange information among students and professionals in the field of earthquake engineering;
- To set strategies for recruiting graduates and undergraduate students from all earthquake engineering related disciplines;
- To foster communication among all participating disciplines, to bridge the gap between new knowledge, design, practice and policy.

PoliTo Student Chapter

Executive Committee (EC) :

1. President,
2. Vice-President,
3. Secretary,
4. Treasurer,
5. Outreach Officer
6. Webmaster.

Duties of the Executive Committee

- Review and approve the activity plan;
- Organize the work;
- Attract new members from all disciplines who can contribute to the goals of the Student Chapter;
- Review the constitution when requested from the membership-at-large and propose appropriate changes;
- Manage EERI PoliTo Technical Seminars and Conferences by identifying appropriate topics and speakers, preparing seminar / conference plans and selecting locations and timing, working with Chapter Faculty Advisor to arrange for facilities and conducting seminars and conferences and constituting “Task Committees” among the members to undertake specific tasks.

1. President:

The president of EERI PoliTo Student Chapter will be responsible for communicating the status of activities and matters affecting the membership. The president will preside over all EC and / or special meetings and call for special EC and / or member meetings. The president will sign, as president of the Chapter, any kind of written documents that require such signature. The President will write and submit to the EC the plan of activities for the quarter. The President will perform any other duties the EC may determine. The President must be an EERI member for at least a year.

2. Vice-President:

The Vice-President is responsible for overseeing, facilitating and assisting the activities of the committee. The Vice-President shall also, in the event of absence or disability of the President, perform the duties and exercise the powers of the President and shall perform any other duties the EC may prescribe. The Vice-President must be an EERI member for at least a year.

3. Secretary:

The Secretary shall perform all those functions necessary to conform to the legal requirements of a student organization body, concerning the Chapter's administration. The Secretary will keep the records of the Chapter's activities and notify the membership about all meetings, elections and any other activities of interest. The Secretary will maintain a membership roster and perform any other duties the President or the EC may require.

4. Treasurer:

The Treasurer shall perform all those functions necessary to conform to the legal requirements of a student organization body, concerning the Chapter's finances. The Treasurer will keep the records of the Chapter's financial activities and notify the membership about required dues or contributions and any other financial matter of interest. The Treasurer will perform any other duties the President or the EC may require.

5. Outreach Officer:

The Outreach Officer shall be in charge of organizing any outreach activities planned and approved by the Executive Committee.

6. **Webmaster:**

The Webmaster shall be in charge of updating the EERI PoliTo student chapter website, including posting information about the organization

Student Chapter EERI



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Website

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 Earthquake Engineering
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Welcome to the EERI Student Chapter

EERI is a professional organization comprised of engineers, geoscientists, architects, planners, public officials, and social scientists.

Mission Statement:

The objective of the Earthquake Engineering Research Institute is to reduce earthquake risk by:

1. Advancing the science and practice of earthquake engineering
2. Improving understanding of the impact of earthquakes on the physical, social, economic, political, and cultural environment
3. Advocating comprehensive and realistic measures for reducing the harmful effects of earthquakes.

New Website for the Student Chapter!

That's right, we have a new website. Please check it out and tell us what you think. Please forward all questions or comments to the [webmaster](#).

The contents of this page have not been reviewed or approved by the University of Minnesota.

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Last modified on June 19, 2007

Student Chapter EERI



Earthquake Engineering
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UNIVERSITY OF MINNESOTA



University of Minnesota, EERI Student Chapter Annual Report 2007-2008

General Information

Address: Earthquake Engineering Research Institute - U of MN
Civil Engineering Building
500 Pillsbury Drive SE
Minneapolis, MN 55455

Email: eeriumn@umn.edu

Website: <http://www.tc.umn.edu/~eeriumn/>

| | | | |
|-----------|-----------------|------------------|--------------------------------------------------------|
| Officers: | President | Charles DeVore | cdv0043@umn.edu |
| | Vice President | Keith Palmer | palme278@umn.edu |
| | Secretary | Roberto Piccinin | picci007@umn.edu |
| | Treasurer | Beth Brueggen | brue0992@umn.edu |
| | Faculty Advisor | Taichiro Okazaki | tokazaki@umn.edu |

Goals for 2008-2009:

- Continue to increase graduate and undergraduate student membership
- Begin the school year with an informational meeting for students
- Host visiting professional seminars at least once per semester through the Friedman Family Program
- Encourage more students to participate in outreach and educational activities

Guest Speakers: During the fall semester, our chapter hosted three speakers that spoke to our department.

Our chapter hosted Mr. John Hooper from Magnusson Klemencic through the Friedman Family Visiting Scholar program. He presented his work in the seismic design of high rise structures and the use of steel plate shear walls.

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These presentations offer a valuable opportunity for students and faculty to hear about earthquake related issues and research which is rarely discussed in Minnesota.

Also speaking to our chapter, Professor Erik Johnson from the University of Southern California spoke on his research regarding structural control and structural health monitoring.

Finally, Professor Katsumi Kobayashi visiting from Fukui University, Japan, presented his work on reinforced concrete structures and seismic retrofitting using FRP.

We are currently trying to find a speaker for the spring semester to complement the speakers through the fall semester.



Student Chapter EERI



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Outreach Events: Our chapter participated in several outreach events so far this year. Through various outreach activities we have reached out to multiple schools to give presentations of age-appropriate seismic demonstrations. The highlight of our presentation is the use of a table-top shake table to demonstrate the effects of earthquakes on a scale building. A base isolation demonstration shows people some of the novel ways structures can be protected from seismic events. In Minnesota, these activities are especially useful because it builds regional awareness of earthquake hazards in a region that would normally not hear about it.



Report Submitted By: Charles DeVore on 03/14/2007

Student Chapter EERI



Earthquake Engineering
Research Institute

Seminario EERI:

Prof. FILIP C. FILIPPOU

*University of California,
Berkeley*

NONLINEAR ANALYSIS METHODS FOR THE SEISMIC RESPONSE EVALUATION OF STRUCTURES



POLITECNICO DI TORINO



NONLINEAR ANALYSIS METHODS FOR THE SEISMIC RESPONSE EVALUATION OF STRUCTURES

Prof. FILIP C. FILIPPOU

University of California, Berkeley

Berkeley, California

94720-1710, USA

Abstract

Nonlinear analysis methods have been introduced in seismic design codes of many countries. It is expected that such methods will be in widespread use in the near future either in the form of static push-over procedures or even in the form of nonlinear time history procedures. The talk will address the development of a family of models for the simulation of the nonlinear hysteretic behavior of structures and offer a critical appraisal of their benefits and limitations. These models are deployed in a general computational framework that permits the seismic response evaluation of structure-foundation systems.

BIOGRAPHICAL SKETCH

Filip C. Filippou is professor of structural analysis in the Department of Civil and Environmental Engineering at the University of California, Berkeley. He received the Ph.D. from the same University in 1963. He has conducted research in: Nonlinear analysis of structures; Finite Element Analysis; Constitutive Models of Materials; Design, Analysis and Behavior of Structures under Seismic Excitations; reinforced and prestressed concrete. Among professor Filippou's notable awards are the Roy W. Carlson Distinguished Professor of Civil Engineering 2004-2007, the Walter L. Huber Civil Engineering Research Prize in 1994 and Alfred Noble Prize, American Society of Civil Engineers in 1988.

DATE: Thursday, MARCH 19, 2008

TIME: 2:30 PM

LOCATION: AULA ALBENGA 2nd floor, Department of Structural and Geotechnical Engineering (DISTR), Polytechnic of Torino

Faculty, graduate students, and all others are invited to attend.

Gian Paolo Cimellaro

Politecnico di Torino - Dipartimento di Ingegneria Strutturale e Geotecnica
Corso Duca degli Abruzzi, 24 - 10129 Torino Italia
tel: +39 011 464 4801 fax: +39 011 464 4800
e-mail: gianpaolo.cimellaro@polito.it url: www.polito.it/iceca/dipartimento/distr

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Research Institute

Seminario EERI:

T. T. SOONG

*State University of New York
at Buffalo*

STRUCTURAL CONTROL: INTRODUCTION AND FRUITFUL RESEARCH AREAS



POLITECNICO DI TORINO



STRUCTURAL CONTROL:
INTRODUCTION AND FRUITFUL RESEARCH AREAS

T. T. SOONG

State University of New York at Buffalo
Buffalo, New York 14260, USA

Abstract

This talk gives an overview of some of the basic control concepts as applied to civil engineering structures, and provide examples of structural applications of this technology. Included in this presentation are some unique requirements and challenges of civil engineering structural control. Several promising research areas are identified and discussed.

BIOGRAPHICAL SKETCH

Tsu-Teh Soong is Professor of Engineering Science in the Department of Structural & Environmental Engineering at the University at Buffalo, the State University of New York (SUNY). Professor Soong is recognized worldwide for his pioneering work, innovations and leadership in the theory and applications of structural control systems in civil infrastructure facilities. He was a co-principal investigator of the National Science Foundation grants that established the National Center for Earthquake Engineering Research (NCEER) in 1986 and the Multidisciplinary Center for Earthquake Engineering Research (MCEER) in 1997. He has conducted his research in the area of engineering structural dynamics, reliability, control and random vibration. His recent work has focused on the development of passive and active control systems for protecting structures against potential damage due to large environmental forces, such as earthquakes, strong winds and large waves. A unique aspect of Soong's research in protective systems is that it spans the entire spectrum, from conceptualization, modeling analysis and experimental verification in the laboratory and in the field to implementation in actual structures. His work has led to the development of these systems for actual applications in the United States, Japan and China. Professor Soong is the author or co-author of eight books and some 240 publications. Among Soong's notable awards are the Humboldt Foundation Senior U.S. Scientist Award (the Humboldt Prize) in 1988 and 1992, and the 1999 Norman Medal and the 2002 Nathan M. Newmark Medal, both from the American Society of Civil Engineers (ASCE) and SUNY Distinguished Professor in 2004.

DATE: Thursday, MARCH 12, 2008

TIME: 2:30 PM

LOCATION: AULA ALBENGA 2nd floor, Department of Structural and Geotechnical Engineering (DISTR), Polytechnic of Torino

Faculty, graduate students, and all others are invited to attend.

Gian Paolo Cimellaro

Politecnico di Torino – Dipartimento di Ingegneria Strutturale e Geotecnica
Corso Duca degli Abruzzi, 24 – 10129 Torino Italia
tel: +39 011 464 4801 fax: +39 011 464 4899
e-mail: gianpaolo.cimellaro@polito.it url: www.polito.it/ricerca/dipartimento/distr/

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Seminario EERI:

Vincenzo GATTULLI
University of L'Aquila

DIRECT AND INVERSE PROBLEMS IN ELASTIC SUSPENDED CABLES WITH DAMAGE



POLITECNICO DI TORINO



DIRECT AND INVERSE PROBLEMS IN ELASTIC SUSPENDED CABLES WITH DAMAGE

Vincenzo GATTULLI
University of L'Aquila

Abstract

In cable-stayed structures cables are subjected to potential damage, mainly due to fatigue and galvanic corrosion. The lecture presents the recent results obtained on both the direct and the inverse problems. Firstly, an analysis of damage effects on the statics and dynamics of suspended cables is presented. An elastic continuous monodimensional model for damaged cables, including geometric nonlinearities, is formulated for the purpose. The damage is described as a diffused reduction of the cable axial stiffness, and defined through its intensity, extent and position. Exact solutions of the equations governing the cable static equilibrium under self-weight are achieved, and the significance of the tension loss and sag augmentation resulting from damage are investigated under variation of practically significant parameters.

The system spectral properties characterizing the free undamped dynamics are obtained in a closed-form fashion for shallow cables within the low frequency range. The sensitivity of the frequencies to the intensity and extent of damage is discussed, outlining two damage effects, which alternatively stiffen or soften the cable modes, whose respective static and geometric origin is recognized. Finally, the symmetry-breaking induced by damage on the static profile is verified to destroy the crossing phenomenon (crossover) characterizing the frequency tool of undamaged cables, which degenerates into a narrow frequency veering phenomenon.

Secondly, the frequencies of the dominant transversal motion of the cable are chosen as damage indicators, since they are sufficiently sensitive to the damage intensity and extent, while the damage position requires additional information. The damage identification problem is formulated by defining an objective error-function between the measured and the model frequencies, to be minimized in the space of the damage parameters.

Pseudo-experimental data are initially used to test the effectiveness and resolution of the procedure. The results confirm the uniqueness of the problem solution and its correctness. The robustness of the solution is discussed while considering the presence of random errors of increasing amplitude. The procedure is positively verified also with experimental measures from a prototype model of an artificially damaged spiral strand.

DATE: Thursday, MARCH 12, 2008

TIME: 4:00 PM

LOCATION: AULA ALBENGA 2nd floor, Department of Structural and Geotechnical Engineering (DISTR), Polytechnic of Torino
Faculty, graduate students, and all others are invited to attend.

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Corso Duca degli Abruzzi, 24 – 10129 Torino Italia
tel. +39 011 464 4801 fax +39 011 464 4890
e-mail: gianpiero.cimatti@polito.it url: www.polito.it/ricerca/dipartimento/distr

WEBSITE: www.eeri.org

Luisa Degiovanni: luisa.degiovanni@polito.it

Gian Paolo Cimellaro
gianpaolo.cimellaro@polito.it

Laboratorio di dinamica Tel. 4884