EERI
EARTHQUAKE
ENGINEERING RESEARCH
INSTITUTE

WEB SITE: WWW.EERI.ORG

STUDENT CHAPTER

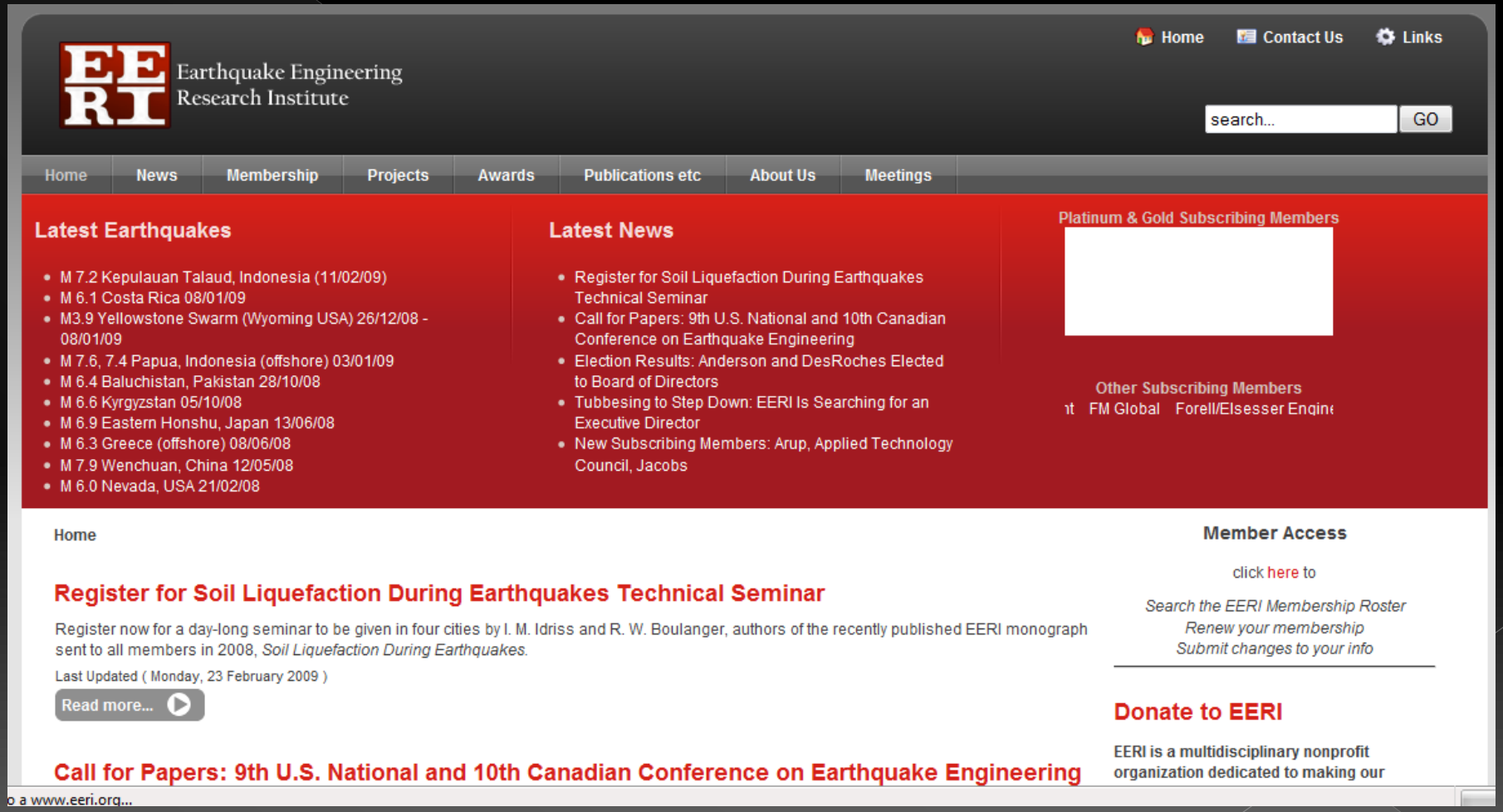
Cos'è EERI??

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



Strumenti

Earthquake Engineering Research Institute

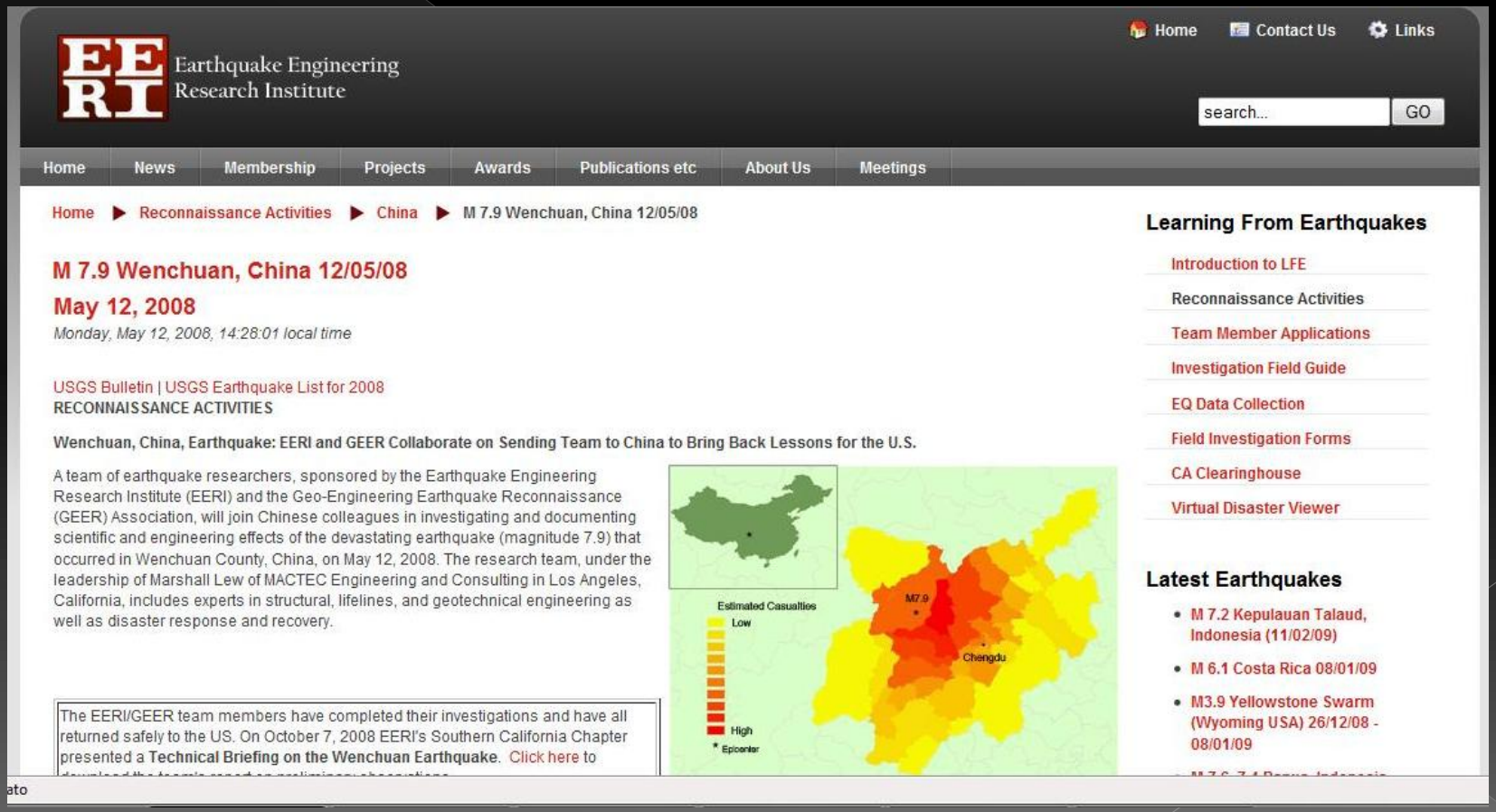
- EARTHQUAKE ENGINEERING RESEARCH INSTITUTE MITIGATION CENTER:

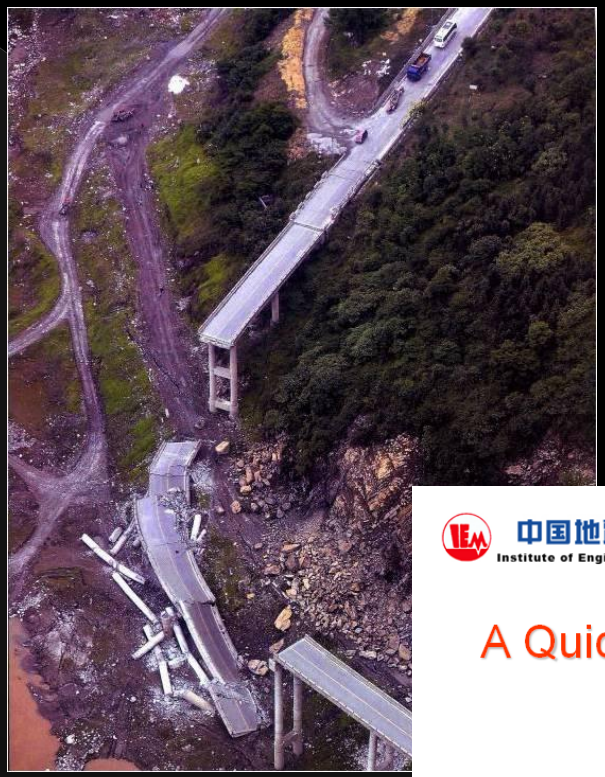
  Centro di Informazione sulle modalità di riduzione dei danni causati dai terremoti.

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

Strumenti

- LEARNING FROM EARTHQUAKES



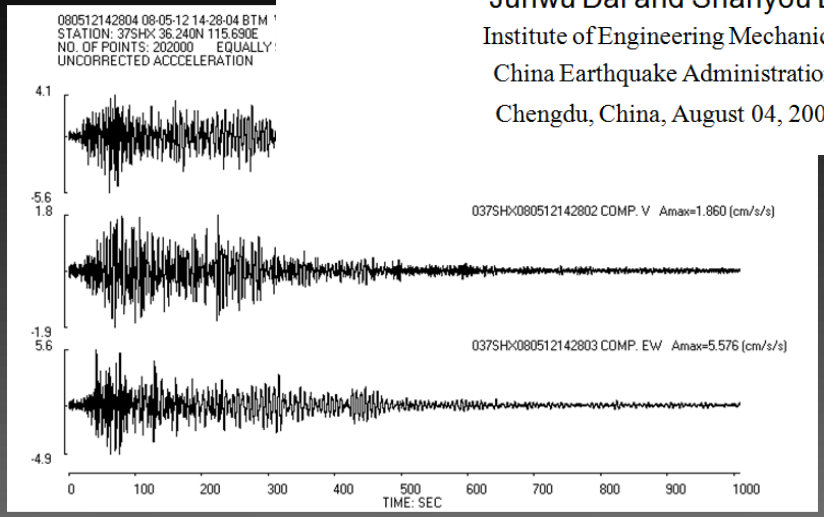


中国地震局工程力学研究所
Institute of Engineering Mechanics,China Earthquake Administration

A Quick Review on Wenchuan Earthquake

Zifa Wang, Baitao Sun
Junwu Dai and Shanyou Li
Institute of Engineering Mechanics,
China Earthquake Administration

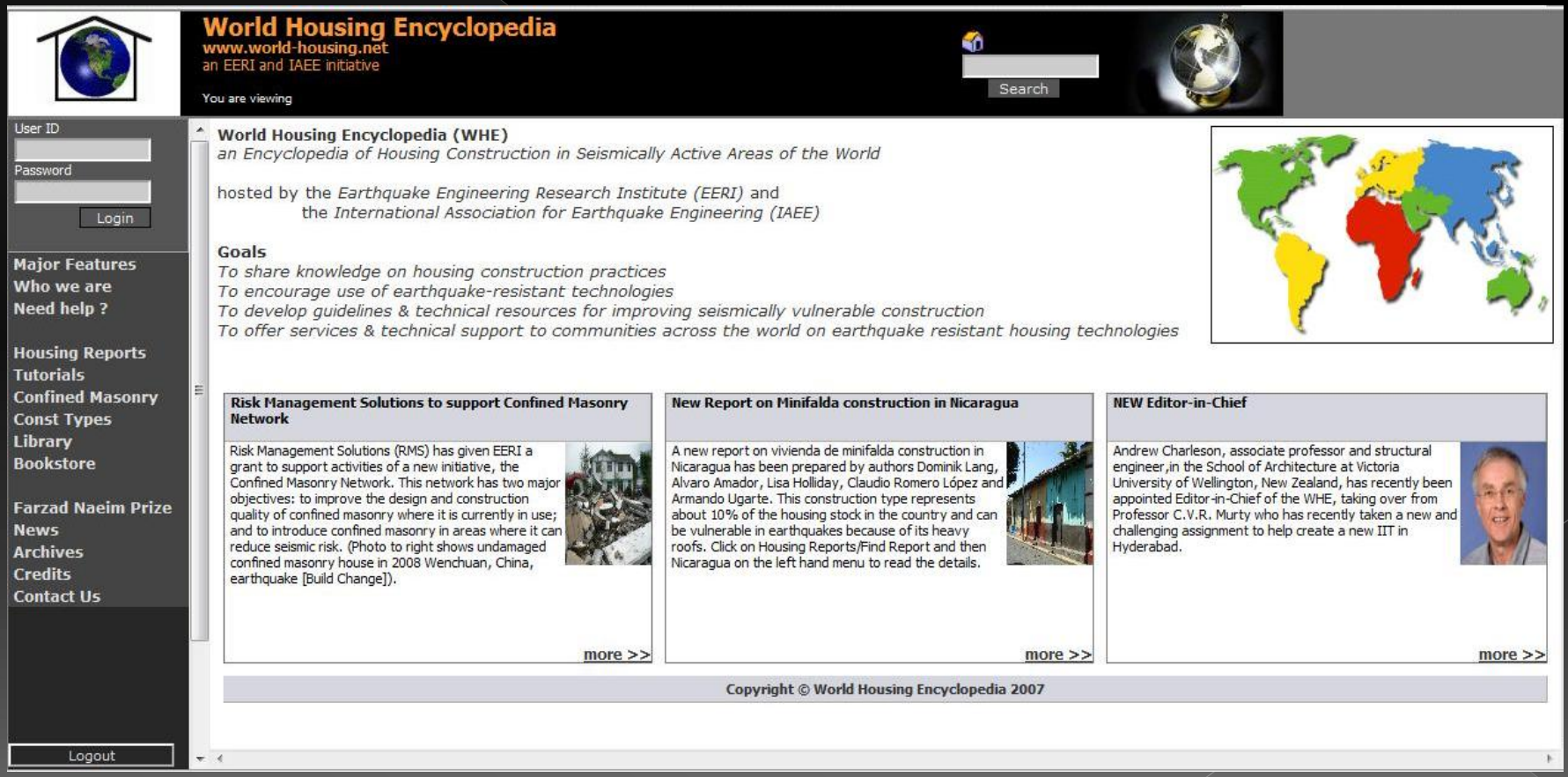
Chengdu, China, August 04, 2008



Strumenti

Earthquake Engineering Research Institute

- WORLD HOUSING ENCYCLOPEDIA



Student Chapter EERI

Earthquake Engineering Research Institute

- 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 Research Institute

- 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

Student Chapter EERI

Earthquake Engineering Research Institute

- Partecipazione alle competitions (paper-graphic-design)

PoliTo Student Chapter

Earthquake Engineering Research Institute

- Statuto:

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:

- 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.

Student Chapter EERI

Earthquake Engineering Research Institute

PoliTo Student Chapter

Executive Committee (EC) :

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

Student Chapter EERI

Earthquake Engineering Research Institute

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.

Student Chapter EERI

Earthquake Engineering Research Institute

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.

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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.

Student Chapter EERI

Earthquake Engineering Research Institute

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.

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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.

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5. Outreach Officer:

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

Student Chapter EERI

Earthquake Engineering Research Institute

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

Earthquake Engineering Research Institute

Website

Student Chapter EERI

Earthquake Engineering Research Institute

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	devo0043@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 Freidman 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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UNIVERSITY OF MINNESOTA

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

Earthquake Engineering Research Institute

UNIVERSITY OF MINNESOTA

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

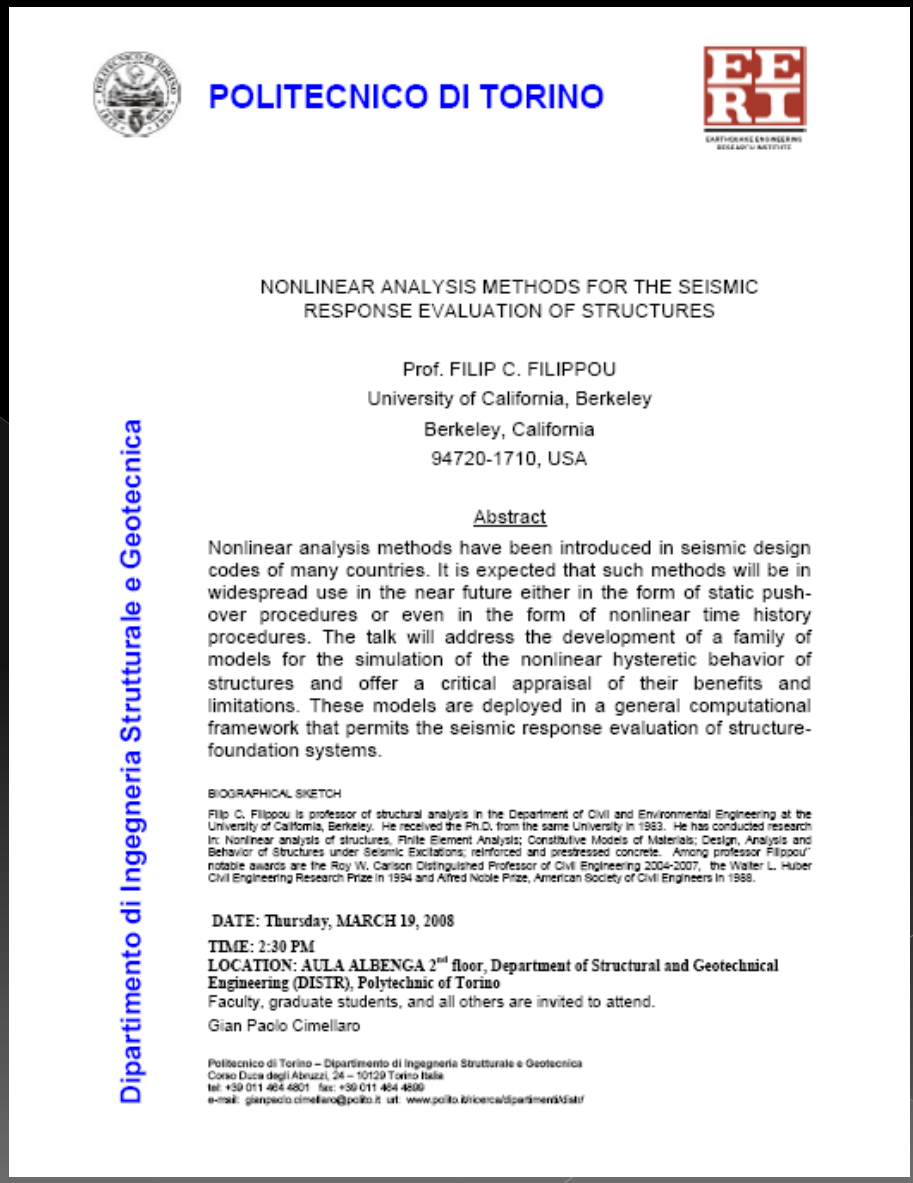
Student Chapter EERI

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

Dipartimento di Ingegneria Strutturale e Geotecnica

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 1983. 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' 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 4899
e-mail: gianpaolo.cimellaro@polito.it url: www.polito.it/ricerca/dipartimenti/distr/

Student Chapter EERI

Earthquake Engineering 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

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e-mail: gianpaolo.cimellaro@polito.it url: www.polito.it/ricerca/dipartimenti/dist/

Dipartimento di Ingegneria Strutturale e Geotecnica

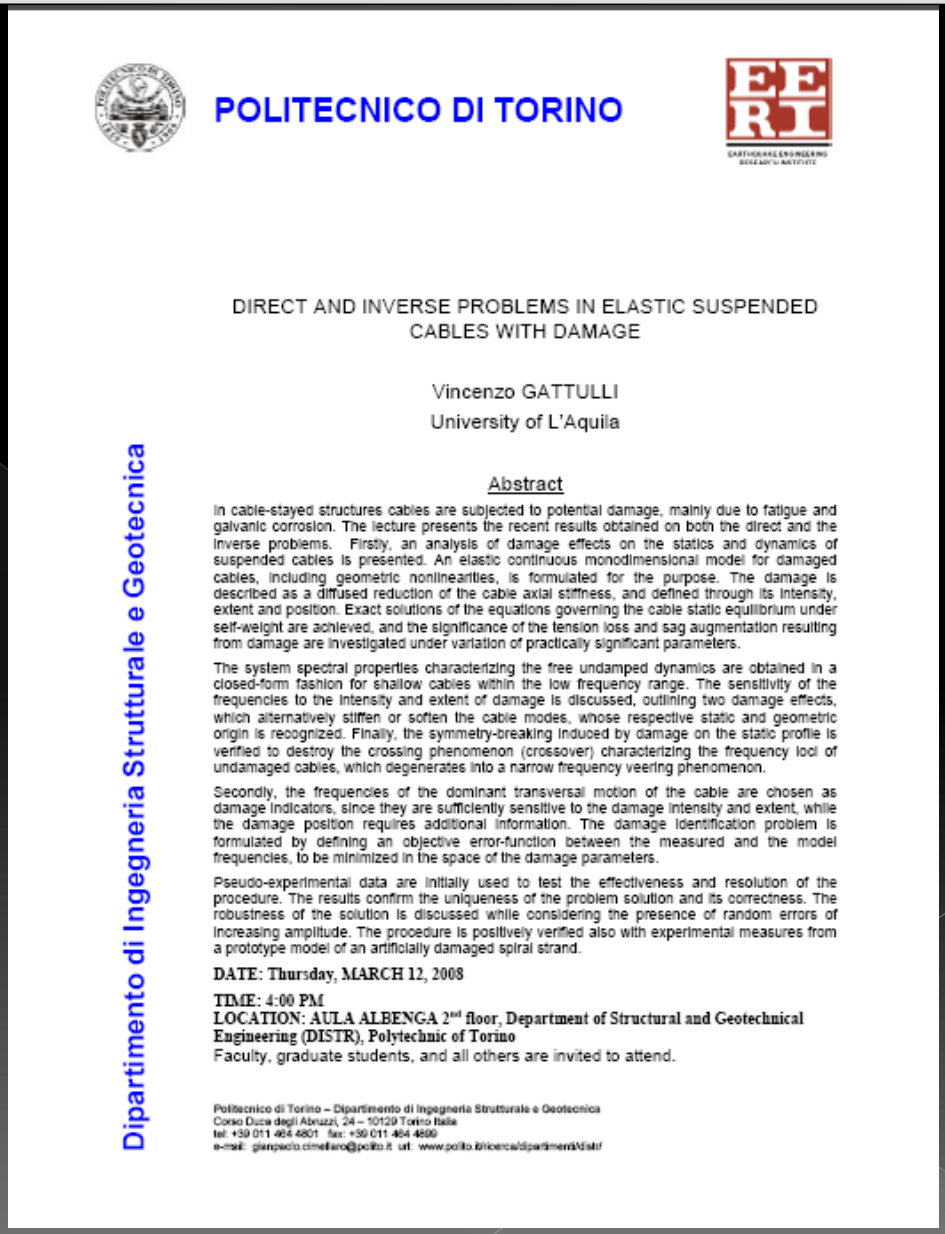
Student Chapter EERI

Earthquake Engineering Research Institute

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

Dipartimento di Ingegneria Strutturale e Geotecnica

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 loci 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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tel: +39 011 464 4801 fax: +39 011 464 4899
e-mail: gianpaolo.cimellaro@polito.it url: www.polito.it/ricerca/dipartimenti/distr/

Info

Earthquake Engineering Research Institute

WEBSITE: www.eeri.org

Luisa Degiovanni: luisa.degiovanni@polito.it

Gian Paolo Cimellaro
gianpaolo.cimellaro@polito.it

Laboratorio di dinamica Tel. 4884