



EARTHQUAKE ENGINEERING RESEARCH INSTITUTE NEWSLETTER

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News of the Institute

CEU Credits Offered for 57th Annual Meeting



The Bella Vista Restaurant in the Las Brisas Hotel has the best ocean view in the area.

EERI is pleased to announce that for the first time in its long history of Annual Meetings, 1.8 CEU credits will be offered for attendance at the 57th Annual Meeting in February. To obtain the certificate, attendees must register for the whole meeting, sign in upon registration, and sign out on the last day. The certificates will be mailed shortly after the meeting.

The Annual Meeting kicks off Wednesday, February 2, 2005, at the Las Brisas Hotel in Ixtapa, Mexico. With spectacular views of the sea, the hotel is located on the beach of a secluded bay and is a short distance from the charming fishing village of Zihuatanejo, which boasts a lively nightlife.

More than 25 speakers will survey developments in earthquake engineering and science since the 1985 Mexico City earthquake, looking at U.S.-Mexico collaboration, exploring approaches to earthquake prediction and early warning, and discussing advances in postdisaster response and recovery. So that attendees can enjoy the beautiful venue, these edifying topics will be balanced with time for leisure in the afternoons.

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EERI Student Chapter Activities

University of British Columbia

EERI's newest student chapter at the University of British Columbia (UBC) — and the only one outside the United States — was very active during the 2003-04 academic year. It hosted three guest lectures and briefings by EERI reconnaissance teams on the San Simeon and Bam earthquakes of December 2003, sent two representatives to EERI's Annual Meeting in Los Angeles, conducted an outreach program, and volunteered at the 13th World Conference on Earthquake Engineering in Vancouver in August. The chapter's outreach program consisted of three parts: (1) giving a presentation to the local

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Members of the University of British Columbia EERI Student Chapter

Student Chapters

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Engineers without Borders student chapter about earthquake risks in developing countries, followed by a roundtable discussion; (2) demonstrating principles of earthquake engineering at two elementary schools by having students build model buildings that were tested on a mini-shake table; and (3) holding a workshop on earthquake engineering for top students in high school as part of a program combining entrepreneurship with science and technology.

At the 13WCEE, the volunteers helped to coordinate audiovisual requirements for the technical and poster sessions. The chapter also hosted a presentation at the conference of the award-winning technical documentary "Cascadia: The Hidden Fire," which discusses the seismic hazard in the Pacific Northwest. Producer and Director Michael Lienau was there to answer questions. The chapter also organized "ShakeDown!" — a social event for all graduate student delegates



Members of the University of Michigan Student Chapter with Distinguished Lecturer Loring Wyllie.

and their guests, attended by approximately 200. The UBC EERI Student Chapter Web site is www.civil.ubc.ca/research/EERI.

University of Puerto Rico

During 2004, the University of Puerto Rico at Mayagüez (UPRM) EERI Student Chapter held a series of five lectures and seminars. One speaker (Luis E. Suárez) was the UPRM chapter advisor, two others (Gustavo Pacheco and Bernardo Deschappelles) were on the faculty of the Polytechnic University of Puerto Rico, and the other two (Wilkins Aquino and Jay Pulliam) were from Cornell University and the University of Texas at Austin, respectively. As a fundraising activity, the students sold polo shirts with the chapter logo. The Department of Civil Engineering of UPRM built a new office for the chapter (shared with the ASCE Student Chapter) in an extension of the current building. The president of ASCE International, William P. Henry, was present for the inauguration in November.



Members of the University of Puerto Rico at Mayagüez EERI Student Chapter.

an EERI Visiting Professional and the EERI 2003 Distinguished Lecturer, William Petak. One of their guest lecturers was EERI Past President, Honorary Member, and previous Distinguished Lecturer Robert Whitman, who spoke on "Effects of Earthquakes upon Earth Retaining Structures." Another lecturer was the Shah Family innovation prize recipient from 2000, Durgesh Rai, whose topic was beam-columns under cyclic loads.

The visiting professional was EERI Past President Loring J. Wyllie of Degenkolb Engineers in San Francisco, California, who discussed earthquake damage from events that resulted in changes to codes and practice. UM student chapter representatives also participated in the 2004 EERI Annual Meeting in Los Angeles.

The chapter Web site is www.engin.umich.edu/soc/eeri/.

Academic Position

Utah State University

The Geology Department at Utah State University (USU) seeks candidates for a tenure-track position at the assistant professor rank in geophysics to start in August 2005. A Ph.D. in geophysics or a closely related field is required, and candidates should have demonstrated research excellence and a commit-

ment to teaching. Successful candidates will be expected to develop an independent research program, to teach graduate and undergraduate courses in geophysics, and to integrate with existing strengths in the department. Geophysicists are encouraged to apply who have expertise in (but not limited to) seismology, exploration geophysics, geodesy, potential fields, geodynamics, and paleomagnetism, and who examine processes within the

continental crust and lithosphere.

For the complete position announcement, visit www.usu.edu/hr/W2-166-04.htm. Additional department information is available at www.usu.edu/geoldept. Review of applications will begin February 1, 2005. USU is an AA/EO employer with an NSF Advance Grant to promote opportunities for minorities and women in the sciences and engineering.

Annual Meeting

continued from page 1

All EERI members should have received in the mail the brochure containing the meeting registration form and hotel information. The registration fee includes daily refreshment breaks, the conference notebook, two receptions, and the Friday night banquet. Online registration is available at the Web site www.eeri.org. Don't delay registering — this Annual Meeting has something for everyone. You won't want to miss it! Registering before the early deadline of January 12 will save you \$50.

Make your hotel reservations by calling the Las Brisas Hotel Reservations Manager Claudia Montes at (011-52) (755) 553-2121 ext. 3520 by **January 7** to help ensure that EERI fills its room block. The hotel requires seven days' advance notice for cancellations. EERI's travel agent, Samia of Bay Travel, can assist our members in making airline reservations (phone 408/253-8615, fax 408/255-6967, e-mail baytravel@sbcglobal.net). Be sure to make them immediately, as fares may rise later in January.

Subscribing members who are interested in exhibiting at the Annual Meeting should contact Sonya Hollenbeck (sonya@eeri.org) of the EERI staff.

Younger member's social after banquet: Capitalizing on the success of the previous two years, EERI's Younger Members Committee Chair Joshua Marrow is inviting all younger members (under age 35 or so) to meet at the hotel bar at 9:30 p.m., immediately following the Friday dinner banquet. After a brief no-host cocktail hour, the group will be off to take part in Zihuatanejo's night life. More information will be available at the Annual Meeting. For further information or to RSVP, please contact Josh at jmmarrow@sgh.com.

Obituary

Robert J. Swain (1928-2004)



Robert J. Swain

Long-time EERI member Robert J. Swain passed away on October 16, 2004. A native of Wisconsin, Swain was founding president of Kinemetrics, Inc., one of EERI's Subscribing Members. Both an engineer and an entrepreneur, Swain made significant contributions to the fields of seismology and earthquake engineering. He managed many notable projects, including the placement of seismometers on the moon.

Before founding Kinemetrics, Swain was the general manager of UGM (United GeoMeasurements), a division of United ElectroDynamics. During his tenure, UGM was awarded the contract to build lunar seismometers for NASA's Apollo Program. After the difficult work of designing, building, and testing the seismometers, Swain's team was thrilled to watch on television as astronaut

Buzz Aldrin deployed the first one on the moon.

UGM's core business languished while the company was preoccupied with the Apollo seismometers, and after Apollo there was no more space business. Without a job in 1969, Swain founded the new company of Kinemetrics with the help of several of his UGM team members. Last year, Kinemetrics provided earthquake and seismic instruments to 60 countries.

Swain graduated from Purdue University with honors in 1951 and was recognized in 1993 by Purdue with the "Outstanding Electrical Engineer Award." For many years, he was chairperson of the National Earthquake Hazards Reduction Program Coalition. He was listed in the "American Men and Women of Science" and was an active participant in many professional associations in addition to EERI.

Swain was vitally interested in his family and was active in his church, the YMCA, and the United Way. He felt that Kinemetrics employees were his "family," too. The workplace was always friendly because of his grace and sensitivity towards his employees. He is survived by his wife Marjorie, son Todd, and daughter Katherine.

News of the Institute

Nominations for 2006 Distinguished Lecturer

Since 1992, EERI has honored leaders in the earthquake profession through the annual Distinguished Lecturer Award. This lecture is always presented for the first time at the EERI Annual Meeting and then at a series of meetings nationwide. The lecturer for 2005 will be Professor Jack Moehle of the Pacific Earthquake Engineering Research Center, speaking on the topic of "Performance-Based Design: Developments and Applications." The Honors Committee will meet during the Annual Meeting in Ixtapa, Mexico, to consider candidates for the Distinguished Lecturer Award for 2006. Please submit written nominations to the Honors Committee, in care of the EERI office, by January 31.

News of the Institute

Endowment Fund Donors

EERI would like to thank the donors to the Endowment Fund shown below and acknowledge their recent contributions. EERI's Endowment supports those innovative projects that ensure the Institute's continuing leadership in the earthquake engineering professions. Bronze Subscribing Members are listed here because \$600 of their \$3,000 dues is donated to the Endowment Fund.

Bronze Subscribing Members:

Forell/Elsesser Engineers, Inc.
Geomatrix Consultants, Inc.
KPFF Consulting Engineers
Refraction Technology, Inc.
Simpson Gumpertz & Heger, Inc.

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Call for Abstracts

EGU 2005: European Geosciences Meeting

The European Geosciences Union General Assembly will be held April 24-29, 2005, in Vienna, Austria. Abstracts are being accepted for all sessions. Maria Bostenaru of the University of Karlsruhe and Xavier Goula of the Geological Survey in Barcelona are soliciting abstracts for a session entitled *Natural Hazards Impact on Urban Areas and Infrastructure*. The session aims to bring together geoscientists and urban planners to address natural hazards impact, prediction, mitigation, and assessment.

For information about the conference, abstract submission, and summaries of each of the sessions, visit www.copernicus.org/EGU/ga/egu05/index.htm. Abstracts are due January 21, 2005.

Announcement

New NSF International Research and Education Program

Proposals for the program "Partnerships for International Research and Education" are due March 10, 2005. The Partnerships Program will offer awards of up to \$2.5 million over five years to enable U.S. institutions to establish collaborative relationships with foreign groups or institutions in order to advance specific research and education objectives and to make possible research efforts that neither side could accomplish on its own. Strong preference will be given to international partnerships that are novel and new.

For more information, visit www.nsf.gov/pubsys/ods/getpub.cfm?nsf05533.

Publication

Performance-Based Design Workshop

Proceedings are available for the workshop "Performance-Based Design: Concepts and Implementation," held June 28–July 1, 2004, in Bled, Slovenia. The workshop was co-organized by Peter Fajfar and Helmut Krawinkler and sponsored by the PEER Center and Slovenian organizations. It brought together leading researchers and engineers from 14 countries to assess the state of knowledge and discuss future directions for research and design practice on issues important for the development and implementation of performance-based earthquake engineering concepts.

The 43 papers prepared for the workshop, as well as workshop resolutions and conclusions, are compiled in 548 pages of proceedings. The price is US\$45 (plus postage for overseas orders). Please send requests to PEER Reports Orders, Pacific Earthquake Engineering Research Center, 1301 South 46th Street, Richmond, CA 94804 or info@nisee.berkeley.edu.

Announcement

NSF Education RFP

The National Science Foundation (NSF) Directorate for Engineering and Directorate for Education are soliciting proposals for the program "Department-Level Reform of Undergraduate Engineering Education." The solicitation provides an opportunity for institutions to compete for planning and implementation grants to assist departmental and larger units in improving undergraduate education and student learning. Proposals are due March 11, 2005. For more information, visit www.nsf.gov/pubsys/ods/getpub.cfm?nsf05531.

News of the Membership

Movahedi, Wilson and Nikolaou Receive Awards

EERI member **Dr. Hassan B. Movahedi** has been chosen to receive the Physician's Exceptional Contribution Award for Orange County/MSA (Metropolitan Statistical Area) for 2004.

Movahedi practices internal medicine with a subspecialty nephrology and hypertension at the Southern California Permanente Medical Group. His philanthropic and community service took him to Bam, Iran, in December 2003 as part of the EERI reconnaissance team, where his expertise and knowledge of the native language were great assets. He worked with the team and local officials, initially assessing the needs of the local health centers, the transportation and care of the injured, and sanitization of the devastated areas. The team also visited field hospitals in Bam and trauma centers in Kerman (the closest major city to Bam), providing the necessary care and support to the local population.

While in Iran, Movahedi also practiced as a physician, attending daily rounds in the nephrology ward of the hospital in neighboring Kerman, offering his expertise in the care and management of victims with renal failure secondary to crush injuries. Upon his return to the United States, Movahedi spearheaded a major effort to raise \$10,000 to purchase a hemodialysis machine, which was subsequently donated to the University Hospital in Kerman.

The ASCE Technical Council on Forensic Engineering recently announced that EERI member **John C. Wilson** is the recipient of the 2003 Outstanding Paper Award for his paper, "Repair of New Long-Span Bridges Damaged by the 1995 Kobe Earthquake," published in the



John C. Wilson

November 2003 issue of the *ASCE Journal of Constructed Facilities*. The paper described the performance of three large new bridges during the 1995 earthquake in Kobe, Japan. These were modern long-span bridges applying the latest design concepts, materials, and details. Yet seismically vulnerable elements were present in all of the bridges. Because of their scale, repairs were costly and time-consuming. In addition, the ensuing impact on commerce relying on these bridges was devastating while they were out of service. The awards committee was impressed with the significance of the lessons that can be learned from this paper, as well as the clarity of Wilson's concise presentation of the damage and repair procedures. John Wilson received his Ph.D. in civil engineering at Caltech, and is a faculty member at McMaster University in Hamilton, Canada. He is currently on sabbatical at the University of Canterbury, New Zealand.

EERI member **Sissy Nikolaou** was presented with the Shamsheer Prakash Prize for Excellence in Practice during a special ceremony at the 2004 Conference on Case Histories in Geotechnical Engineering held in New York City in April 2004. The Shamsheer Prakash Foundation presents this award annually to young engineers and scientists from all over the world who are specialists in geotechnical engineering or geotechnical earthquake engineering, recognizing the winner's significant

independent contributions and promise of future excellence in these fields. Nikolaou is the first woman to be honored with this prestigious award.

Nikolaou is senior geotechnical engineer and seismic analyst at Mueser Rutledge Consulting Engineers, a leading foundation engineering firm based in New York City. She received a degree in civil engineering from the National Technical University of Athens, and master's and Ph.D. degrees from the State University of New York at Buffalo in 1995 and 1998, respectively. Over the past six years, Nikolaou has been actively involved in several major projects involving long-span bridges, nuclear power plants, deep excavations, and high-rise buildings. She has published more than 30 technical papers and participated in numerous research projects supported by the Multidisciplinary Center for Earthquake Engineering Research, the National Science Foundation, the Federal Highway Administration, the Shimizu Corporation, and the European Union. Most recently she served on New York City committees for review of the current liquefaction criteria and for implementing the International Building Code in the local seismic code. Her areas of specialization are GIS-based seismic risk analysis, site characterization, dynamic soil-structure interaction, and seismic behavior of pile-supported structures.



Sissy Nikolaou

Call for Abstracts

European EQ Engineering & Seismology Conference

The European Association for Earthquake Engineering and the European Seismological Commission are calling for abstracts for the First European Conference on Earthquake Engineering and Seismology to be held in Geneva, Switzerland, September 3–6, 2006.

A joint event of the 13th European Conference on Earthquake Engineering and the 30th General Assembly of the European Seismological Commission, the conference program will feature common and separate keynote lectures for both communities and poster and oral presentations, as well as special theme sessions.

Topics include seismicity of the European-Mediterranean area, crust and upper mantle structure, earthquake forecasting and prediction research, earthquake risk scenarios, and social and economic issues. Abstracts are due by January 31, 2006. For a complete list of topics and other information, visit www.symporg.com/2006.html.

Announcements

ATC/USGS Central US EQ Hazard Seminar

The Applied Technology Council (ATC) and the U.S. Geological Survey (USGS) will conduct a seminar March 3, 2005, in Memphis, Tennessee, on “New Knowledge of Earthquake Hazard in the Central United States and Implications for Building Seismic Design Practice.” The seminar is designed for practicing structural engineers, geotechnical engineers, and earth scientists and is being conducted as part of the

ongoing ATC-35 Project to “Transfer U.S. Geological Survey Research Results into Engineering Design Practice.”

Emphasis in the seminar will be on earthquake potential, ground motion, and building design implications for earthquakes occurring in the New Madrid seismic zone. Earthquakes occurring in other parts of the central United States will also be addressed, as will uncertainties in earthquake size, recurrence, and ground motion used for design.

The seminar will be held at the Holiday Inn at the University of Memphis. The pre-registration fee, which includes the cost of lunch, intermission refreshments, and the seminar handout, is \$120 (\$100 for ATC subscribers). After February 22, 2005, the registration fee is \$145 (\$125 for ATC subscribers). For more information, visit www.atccouncil.org.

ATC/FEMA Nonlinear Static Seismic Analysis Seminar

In February 2005, the Applied Technology Council (ATC) and the Federal Emergency Management Agency (FEMA) will conduct a series of seminars in three West Coast cities to advise practicing design professionals and researchers of the findings and conclusions contained in the ATC-developed *FEMA-440 report, Improvement of Nonlinear Static Seismic Analysis Procedures*.

The results are based on a four-year study (ATC-55 project) carried out to develop (1) guidelines for improved application of the coefficient method, as detailed in the *FEMA-356 Prestandard and Commentary for the Seismic Rehabilitation of Buildings* (successor to *FEMA-273*); (2) guidelines for improved application of the capacity spectrum method, as detailed in the *ATC-40 report, Seismic*

Evaluation and Retrofit of Concrete Buildings; and (3) other guidance related to improved application of nonlinear static analysis procedures.

The seminar program will include slide presentations as well as ample time for discussion. Topics to be addressed include:

- nonlinear static procedures,
- the coefficient method,
- the capacity spectrum method, and
- soil-structure interaction.

The following dates and locations have been selected for the one-day seminar: February 15 in San Francisco, February 22 in Los Angeles, and February 25 in Seattle. The pre-registration fee of \$150 (\$130 for ATC subscribers) includes the cost of the *FEMA 440* report, lunch, intermission refreshments, and the seminar handout (program and copies of the presentation slides).

After February 5, 2005, the registration fee will be \$175 (\$155 for ATC subscribers). For more information, visit www.atccouncil.org.

NSF Visualization Competition

Over the past two years, the National Science Foundation (NSF) and the journal *Science* have partnered to encourage scientists and engineers to share their visualizations with the larger community that supports the global research enterprise. Approximately 400 entries from several states and foreign countries were received for the first two competitions. The work of investigators at the frontiers of science and engineering is becoming more understandable and exciting to the general public, thanks to increased use of images, illustrations, diagrams, and multimedia.

For more information about the 2005 Science and Engineering Visualization Competition, visit www.nsf.gov/od/lpa/events/sevc.

CALENDAR

Items that have appeared previously are severely abbreviated. The issue containing the first appearance, or the most informative, is indicated at the entry's end. Items listed for the first time are shown in **bold**.

JANUARY

6-12. 2nd Consequence-Based Eng. (CBE) Institute, College Station, TX. Info: www.cbe.civil.tamu.edu/ (10/04)

9-13. TRB Annual Meeting, Washington, DC. Info: www.trb.org (8/04)

13-16. Int'l Symp. on EQ Eng., Japan. (2/04)

18-20. 1st Int'l Conf. on Urban Disaster Reduction, Kobe, Japan. Info: www.eeri.org/news/meetings.html (7/04)

31-Feb 3. IMAC XXIII, Orlando, FL. Info: www.sem.org (6/04)

FEBRUARY

2-6. EERI Annual Meeting, Ixtapa, Mexico. Info: www.eeri.org. See page 1. (4/04, 7/04, 9/04, 10/04, 11/04, 12/04, 1/05)

15, 22, and 25. Improvement of Nonlinear Static Seismic Analysis Procedures, various locations. See page 8. (1/05)

19-22. Int'l Assoc. for Bridge Struct. Eng. Conf., New Delhi, India. Info: www.iabse.org (11/03)

MARCH

3. New Knowledge of EQ Hazard in the Central US and Implications for Bldg. Seismic Design Practice, Memphis TN. Info: www.atcouncil.org. See page 8. (1/05)

APRIL

6-9. North American Steel Construction Conference, Montreal, Canada. Info: www.aisc.org/nascc (8/04)

24-29. EGU 2005: European Geosciences Union General Assembly, Vienna, Austria. See page 6. (1/05)

MAY

1-4. UCLA Conf. on Public Health & Disasters, Woodland Hills, CA. Info: www.cphd.ucla.edu/ (11/04)

10. SMIP05 Seminar for Utilization of Strong-Motion Data, Los Angeles, CA. Info: www.conservation.ca.gov/cgs/smip/seminar.htm (1/05)

15-18. Disaster Resistant CA Conf., Sacramento, CA. Info: www.sjsu.edu/cdm/drc05 (11/04)

30-June 1. ERES 2005, Skiathos, Greece. Info: www.wessex.ac.uk/conferences/2005/eres05 (7/04)

JUNE

7-9. SEM Annual Conf. on Experimental & Applied Mechanics & Current Symposia, Portland, OR. Info: www.sem.org (10/04)

20-22. 12th Int'l Conf. on Comp. Methods & Experimental Measurements (CMEM 2005), Malta. Info: www.wessex.ac.uk/conferences/2005/cmem05/ (10/04)

JULY

10-13. 15th World Conf. on Disaster Management, Toronto, Canada. Info: www.wcdm.org (11/04)

AUGUST

21-24. Pipelines 2005, Houston, TX. Info: www.asce.org/conferences/pipelines2005/ (8/04)

22-24. ConMat'05, Vancouver, BC, Canada. Info: www.civil.ubc.ca/conmat05/ (7/04)

SEPTEMBER

14-16. IABSE Structures & Extreme Events, Lisbon, Portugal. Info: www.iabse.org/lisbon (7/04)

16-19. XV Mexican Nat'l Conf. on EQ Eng., Mexico City, Mexico. Info: www.smis.org.mx (12/04)

20-23. 3rd Int'l Structural Eng. & Const. Conf., Shunan, Japan. Info: www.tokuyama.ac.jp/tcss1/ISEC_03/ (4/04)

OCTOBER

16-19. Council on Tall Bldgs. & Ur-

ban Habitat, New York, NY. Info: www.ctbuh.org (9/04)

2006

APRIL

18-21. 8th U.S. Nat'l Conf. on EQ Eng. (8NCEE), EERI Annual Meeting, SSA Annual Meeting, Disaster Resistant California, San Francisco, CA. Info: www.eeri.org (5/04)

AUGUST

14-17. 5th Int'l Conf. on Behavior of Steel Structures in Seismic Areas (STESSA), Tokyo, Japan. E-mail: wada@serc.titech.ac.jp (9/04)

SEPTEMBER

3-6. 1st European Conf. on EQ Eng. & Seismology, Geneva, Switzerland. See page 8. (1/05)

Academic Position

Purdue University

The Department of Earth and Atmospheric Sciences at Purdue University seeks an outstanding, broadly educated, quantitative geoscientist who conducts innovative research on geodynamic or active tectonic processes. Individuals are encouraged to apply who use modern observational techniques in earthquake seismology, earthquake geology, InSAR, seismic tomography, mineral physics, or low-temperature thermochronology, and apply them to mechanics of the lithosphere, deep-earth processes and structure, mantle-lithosphere interactions, the physics of earthquakes or volcanic eruptions, or crustal tectonics.

Candidates must have completed a Ph.D. by the time of appointment, and postdoctoral experience is preferred. This appointment will be tenure-track and at the assistant or associate professor level, to begin in August 2005. Screening of applications will begin on January 15, 2005. For the complete position announcement, visit www.purdue.edu/gat/jobs.html.

Learning from Earthquakes

M7.5 Earthquake Shakes Indonesia

The following information was provided by Sugeng Wijanto.

At 05:26:40 central Indonesian time on November 12, 2004, a magnitude 7.5 earthquake struck the Alor district area of the East Nusa Tenggara Province of Indonesia. Based on the Meteorology and Geophysics Agency in Kupang, East Nusa Tenggara, the epicenter of the earthquake was located at 8.172°S, 124.856°E, about 39 kilometers east of Kalabahi, Alor's main city, and 33 kilometers below sea level on the intersection between the Australian and Eurasian plates. Shaking was felt in Kalabahi with a force of VII–VIII on the MMI scale. The earthquake was followed by milder aftershocks for several days.

When the earthquake hit, residents in the district area (168,000 population) fled their homes and then tried to survive on the streets. From the latest data, the earthquake caused at least 25 deaths, 108 serious injuries, and 115 minor injuries. The victims died mostly after the roofs of their houses collapsed. The earthquake damaged most of the residential area and the main road in Alor. Approximately 8,000 residents lost their homes and stayed outside or in temporary tents provided by the government. The total number of damaged residences was 8,397 units. From that total, 781 totally collapsed, 3,733 were severely damaged, and 3,883 were moderately damaged. Fifty-two religious centers were damaged, including one that totally collapsed. Four office buildings collapsed, 15 were severely damaged, and seven were moderately damaged. Seven school buildings were severely damaged and 13 were moderately damaged, which impacted school activities (source: www.kompas.com, 15 November 2004).

This earthquake demolished the transportation system, including the main road between Kalabahi and Maritaing. Roads were blocked in some areas due to landslides. The Kalabahi Airport could not be used because the runway was cracked. This earthquake also caused tsunami waves on several nearby isles. Residents in Alor were without electricity, because the government power plant was seriously damaged.

Alor Island is approximately 1,000 kilometers east of the resort island of Bali. According to the Meteorology and Geophysics Agency, it was felt in neighboring East Timor, Maumere (Flores Island), and Waingapu (Sumba Island). The effects of this earthquake were similar to previous earthquakes in 1985 and 1991, which killed dozens of people.

News of the Membership

Higgins Award for Hajjar

EERI member Jerome Hajjar and Robert Dexter have been named recipients of the American Institute of Steel Construction's (AISC) 34th Annual T. R. Higgins Lectureship Award for their paper, "Continuity Plate Detailing for Steel Moment-Resisting Connections." According to Louis F. Geschwindner, AISC's vice president of engineering and research, "the awards panel selected this paper as a broadly applicable presentation of information that is important for the entire steel community."

Hajjar, civil engineering professor at the University of Minnesota (UMN), is the faculty advisor to the UMN EERI student chapter. His research and teaching interests include analysis, experimental testing, and design of steel and composite steel and concrete structures. He received AISC's Special Achievement Award in 2004.

The T. R. Higgins Lectureship Award, which is presented at the North American Steel Construction Conference, recognizes lecturers and authors who have made outstanding contributions to the engineering literature on fabricated structural steel. The recipients receive a \$10,000 cash award.



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