ORE since 1966
OCEAN AND RESOURCES ENGINEERING
IN THE SCHOOL OF OCEAN AND EARTH SCIENCE AND TECHNOLOGY AT THE UNIVERSITY OF HAWAI'I AT MĀNOA

HANA O KE KAI "Work of the Ocean"

NEWSLETTER OF THE OCEAN AND RESOURCES ENGINEERING DEPARTMENT, Spring 2011, Volume 12, Issue 1

Chair's Message

Bruce M. Howe, Chair

We were all saddened by the loss of life and devastation caused by the Japan earthquake and tsunami. It is a reminder of the power of nature and the relative frailty of our civilization. At the same time it reinforces in a very direct way the importance of the work we are doing. Prof. Cheung played an important role in advising the State on the expected local magnitude of the tsunami, and his models are widely used by the international community. One week after the event, he gave a special seminar with Gerard Fryer and Dailin Wang on these topics and he provides an account of this below.

On a basic level, rooms 400, 407 and 408 have just been painted, thanks to SOEST Phil Rapoza and crew. Additional improvements to department and student spaces are proceeding.

Inside this issue:

Editor's Corner

Masoud Hayatdavoodi

Editing the last five issues of the ORE newsletter, *Hana O Ke Kai*, over the past three years has been a very fruitful and joyful experience. I truly enjoyed all the different tasks of putting a new issue of the newsletter together. Although I have enjoyed the responsibility very much, it is time for me to slowly reload my backpack for a different journey. This is the last issue for which I have accepted this assignment. I am grateful to all of those who submitted articles and material to the newsletters and contributed in preparing them. I owe a very special thank you to Cheryl Komenaka and Elizabeth Glover for their amazing job in reading the drafts and making corrections.

In my opinion, a departmental newsletter is an excellent means of communication among all the department members and alumni and brings so much benefit to the department. May the decision-makers in the department also feel the same way and make the necessary plans and coordination to continue publishing the newsletter on a regular basis.

I hope you enjoy reading this issue and hope to see *Hana O Ke Kai* again soon.

Photo of the issue: ***ORE Library in transition !***

The ORE library contains about 720 books and reports. Dr. Bretschneider started collecting the books in 1966, in response to the need for the students to have easy access to ocean engineering-related books. The library was recently reorganized and a link to the list of the books was added to the department's website. Several factors are moving us toward a transition of the library. Given the continuing move to newer books and digital media, fewer of the existing books are being used. There is a desire in freeing some space in the office. In a process similar to that used for the reports and papers that were in the conference room, faculty and students will review the collection over the next months and decide which to keep where.

ORE is one of the few departments that has a collection of all MS thesis and Ph.D. dissertations. We expect this wonderful collection will only continue to grow!

Students' Voice

Listening to the Wind of Change!

Masoud Hayatdavoodi, Students Representative

It is time for me to start a new journey!

Beginning this summer I will be switching from my current teaching assistantship to a research assistantship position, working on the "Coastal Bridge and Port Vulnerability to Tsunami and Storm Surge" project funded by the State of Hawaii's Department of Transportation, thanks to the PIs of the project, Professors Ertekin, Riggs and Robertson. At the same time, I will also step down from my current positions as the ORE student representative and ORE newsletter editor.

Throughout these past four years I have had the opportunity to work with many wonderful people and get involved in several different events. The experience that I gained is invaluable. I will recall these years as some of the most amazing years of my life. Now it is time for me to switch gears. It is also time for the department to recruit new students to do the job even better than what I have been doing, students with new thoughts for improving the department.

This is the last time that I am writing the article for the 'Students' Voice' section of *Hana O Ke Kai*. In this last article, I would like to thank all the ORE students, faculty, staff and others who have been extremely helpful, supportive and patient throughout these years. Nothing could have been accomplished without their help and the list is so long that I do not even attempt naming everyone. Particularly I should thank ORE students for their continued support and understanding. They deserve much more in terms of the resources provided for them.

In addition, I am going to write briefly about a vision that I had from the very first days that I joined the department. While the vision has yet to come to fruition, the journey along the path taught me a lot.

ORE is one of the first-of-its-kind academic programs in the country. It was founded by the father of the well-known wind-wave spectrum and an internationally known ocean science expert, Dr. Charles Bretschneider. It has been the home for many of the pioneers in the global community of ocean engineering, either as faculty, students, visiting scholars, cooperating faculty, or advisory panel members, such as Professor Robert A. Dalrymple and Dr. Subrata Chakrabarti. Some of the faculty members of the department have been editor-in-chief or on the editorial board of major journals in the field. The department has been host several times to some of the largest Ocean Engineering related conferences and meetings in the world. Students of the department have won some of the most prestigious national and international awards. The department is the "T" in SOEST, the School of Ocean and Earth Science and Technology, a worldwide known and prestigious school.

The very rich background and firm foundation of the department creates a potential for it to be at the leading edge, and indeed in some cases it is. The current strong program in the department leads to a vision, one in which ORE is *the* leading and most prestigious academic department contributing to the discipline of Ocean Engineering.

While ORE is already performing well, we have a long path to travel to achieve the vision. Below I will briefly discuss a few items that over these years I found to be challenges for achieving this vision.

First and foremost, the goal cannot be achieved if it is not a shared goal. I have realized that sometimes meeting a deadline, passing a course or finishing a project are the ultimate goals for some of our students. Though necessary, setting such goals is by no means sufficient. Let me quote from Tom Krause: "If you only do what you know you can do, you never do very much." Much of what department professors do of course, is to play an important role in expanding students' horizons.

Although limited office space is an old and repeatedly discussed issue in the department, the current student office space could be utilized better. Better here means, cleaner, quieter and friendlier environment with higher mutual respect among users. This, once again, requires everyone's attention. All of us should know that in a closely shared environment, we should try to provide an optimum working condition by increasing our level of consideration toward others and trying not to disturb each other as much as possible. Kai, for instance, renewed the network connections in Holmes 408 through a GSO grant, which made a nice impact on all users in that room. We must believe that we are all responsible in making the current condition better than what it is.

If one reviews the interviews with the graduated students in the past recent issues of the newsletter, one can find that the most repeated answer to the question 'One thing you would change in ORE' is: an ocean engineering wave laboratory! Comparing the theses, dissertations and journal and conference papers in the department with other similar departments reveals that there is very strong research in theoretical-, numerical- and observation-based ocean engineering conducted in the department, but we are deeply suffering from not having an experimental laboratory. This, certainly, is easier said than done but should be a long-term goal.

A high performance department needs a high performance administrative system, one that is not only able to process required procedures but saves valuable time and reduces stress for all concerned, including faculty, students and researchers. This is time and precious energy that can be best spent on high quality research and education. The opposite results in slow progress in the department and unnecessarily involves the faculty, students and researchers in nerve-racking processes and creates pointless friction among the members in the system. Although ORE, as a department within UH, suffers from the out-of-date, slow and …

Continued on page 3

Publications & Events

Some Recent ORE Publications

Lay, T., Ammon, C.J., Kanamori, H., Yamazaki, Y., **Cheung, K.F.**, and Hutko, A.R., "The 25 October 2010 Mentawai tsunami earthquake (Mw 7.8) and the tsunami hazard presented by shallow megathrust ruptures," *Geophysical Research Letters*, 38, L06302, doi:10.1029/2010GL046552, 2011.

Ge, L. and **Cheung, K.F.**, "Spectral sampling method for uncertainty propagation in long-wave runup modeling," *Journal of Hydraulic Engineering*, **137**(3), 277-288, 2011.

Stopa, J.E., **Cheung, K.F.**, and Chen, Y.-L., "Assessment of wave energy resources in Hawaii," *Renewable Energy*, 36 (2), 554-567, 2011.

Stopa, J.E., **Cheung, K.F.**, Garces, M.A., and Fee, D., "Source of microbaroms from tropical cyclone waves," *Geophysical Research Letters*, 38, L05602, doi: 10.1029/2010GL046390, 2011.

Nihous, G.C., "Gulf of Mexico aftermath," *Nature Geoscience*, 4, 141-142, doi: 10.1038/ngeo1098, 2011.

Canals, M. and **Pawlak, G.**, "Three-dimensional vortex dynamics in oscillatory flow separation," *Journal of Fluid Mechanics*, doi:10.1017/S0022112011000012, 2011.

Jaramillo, S. and **Pawlak, G.**, "AUV-based bed-roughness mapping over a tropical reef," *Coral Reefs*, DOI:10.1007/s00338-011-0731-9 , 2011.

Upcoming Meetings and Conferences

30th International Conference on Ocean, Offshore and Arctic Engineering (OMAE 2011), Rotterdam, The Netherlands, June 19-24, 2011

http://www.asmeconferences.org/OMAE2011/

The 21st International Offshore (Ocean) and Polar Engineering Conference (ISOPE-2010), Maui, Hawai`i, USA, June 19-24, 2011

http://www.isope2011.org/

OCEANS '11 MTS/IEEE Kona, Kona, Hawai`i, Sept 19-22, 2011
http://www.oceans11mtsieeekona.org/

29th Symposium on Naval Hydrodynamics, Gothenburg, Sweden, August 26-31, 2012

http://www.chalmers.se/hosted/29snh-en

Listening to the … **Continued from page 2**

… bureaucratic administrative system of UH, it should find ways to cut through the red tape. The department needs to continue to strive to take steps to improve the situation at its level.

Most ORE graduates work in ocean-related careers. This is another sign of the strength of the department. There is a tremendous potential benefit in such a success. Every one of these alumni acts as a messenger in spreading the outstanding prestige of the department around the globe. Significant financial and intellectual support from alumni could help increase the performance of the department. This requires a strong, effective and continued connection with the alumni. With more planning and time dedication, one could develop a system for continued interaction with the alumni. This, however, requires stronger administrative system.

ORE is performing well. I have outlined a few of the problems I see from my perspective that need addressing. While these are clearly difficult financial times and more funding would go along way to solving the problems, that may be unlikely and we need to find other solutions, other paths.

Let me finish the article (and relinquish my soapbox) with another quote from Tom Krause: "Life is not about living with no problem, life is about solving problems."

Mahalo to all, and enjoy this amazing experience which we call life!

ORE Student Research

Dynamics of Cross Shore Thermal Exchange on a Tropical Forereef

Lauren Tuthill

Here in Hawaii, where the beauty of our beaches is an essential aspect of our culture and economy, keeping our waters clean is not just a federal mandate, it is vital to our livelihood. Yet at times the inevitable occurs and our beaches must be closed, perhaps due to a sewage spill or maybe because excess runoff pollutes the water. How long before the beach can be reopened? How long does it take before the polluted water is flushed out? To answer these questions we must examine the cross-shore currents and the exchange of nearshore waters with deeper waters. Cross-shore circulation patterns are also important for the fringing coral reef which depends on nutrients coming from deeper water and on water movement for larval dispersion.

The Kilo Nalu Observatory provides an abundance of data via its cabled instrumentation. About 400 meters offshore in 12 meters of water, an array of instruments including an acoustic Doppler current profiler (ADCP) and conductivity, temperature, depth (CTD) sensors collect water quality and current data in real time. Additionally, meteorological data such as solar radiation, air temperature, humidity, and wind speed and direction is collected onshore. By careful analysis of this data we can characterize the cross-shore current on the south shore of Oahu and identify relevant forcing mechanisms.

An initial look at the data collected at the Kilo Nalu 12 meter site suggests that there are many factors driving the cross shore exchange that may dominate the flow at different times. A measure of the net flow over time reveals that the flow tends to be onshore (Figure 1), which is an indication of 2D circulation at large scales. Based on the location of the Kilo Nalu site, it's estimated that a flow rate of about $0.03 m^3/s$ would be necessary to flush out the nearshore area in one day. Thus we can see that when the net flow is greater than $0.03 m^3/s$, the residence time for the nearshore area is less than a day. The total amount of *exchange* that occurs (Figure 1), the flow onshore minus the flow offshore, is almost twice the net flow. Clearly this is not just an on or off-shore flow; there is a significant amount of exchange occurring.

An empirical orthogonal function (EOF) analysis of the current profile

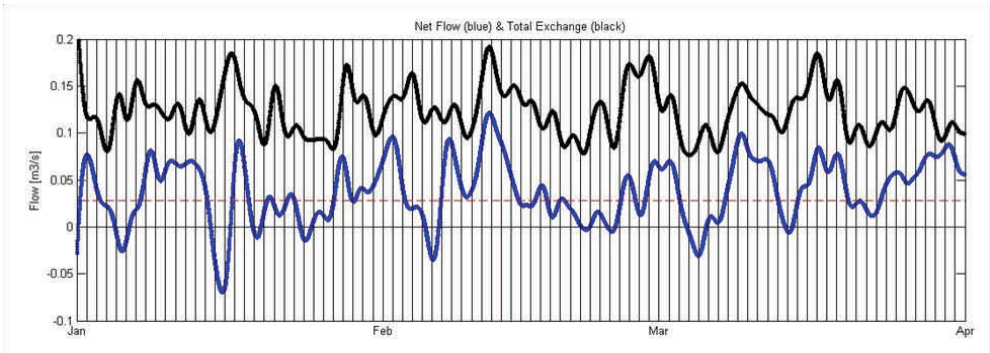

Figure 1. Net flow (blue) onshore and total exchange (black) observed at the Kilo Nalu 12m site. The dashed red line indicates the amount of flow necessary to flush the nearshore area in one day. Vertical lines indicate days.

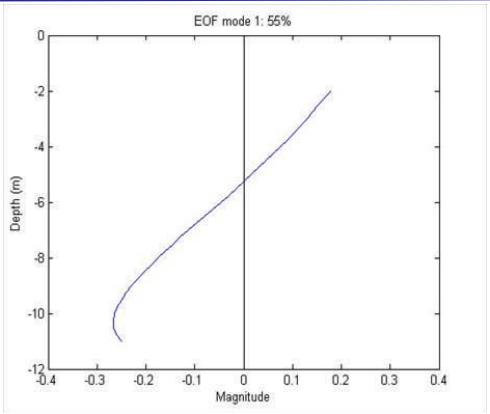

Figure 2. Mode 1 of an EOF of the currents from the 12m site.

shows that an exchange flow, seen in mode 1, accounts for about 55% of the variance (Figure 2). When the water is moving onshore at the surface it is also moving offshore at the bottom. This pattern varies in magnitude and also switches direction (i.e. offshore at the surface, onshore at the bottom) over time. The time signal of this mode is largely diurnal. To examine the diurnal structure, cross-shore velocities were averaged by hour of the day (Figure 3). A clear structure can be seen with an offshore flow at the bottom during the morning hours while the flow in the upper water column is onshore and this pattern reverses itself in the afternoon. Further analysis has shown that this pattern matches the diurnal cycle of surface heat flux. Thus it is hypothesized that the main driving mechanism of the cross-shore exchange is a horizontal temperature gradient driven by diurnal heating and cooling such as that described by Monismith et al. (2006). As the water heats up during the day, the shallower water heats more quickly. This sets up a horizontal pressure gradient which in turn drives the flow. ...

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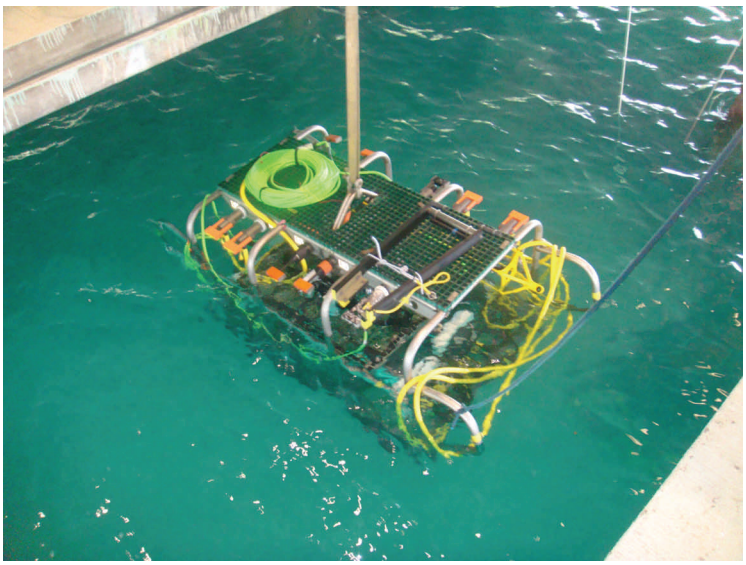
The ALOHA Cabled Observatory (ACO) Project

Bruce Howe, PI

We are currently preparing the ALOHA Cabled Observatory (ACO) seafloor node and sensors for installation from the R/V Kilo Moana late this May. The ACO node will provide power, Internet connectivity, and timing to science experiments supporting the Hawaii Ocean Time-series (HOT) and other programs at Station ALOHA on the seafloor at 4726 m 100 km north of Oahu. Remotely operated vehicles (ROVs, e.g., Jason) will be able to plug in instrumentation and additional infrastructure.

The project was started by Fred Duennebier, Roger Lukas and Dave Karl in 2002. From February 2007 for 20 months an exceptionally rich acoustic data set was collected to demonstrate proof of concept. An October 2008 installation was unsuccessful due to a connector failure. Now we are just finishing up modifications that we hope will make the system more robust and long-lived.

We are using a retired first generation fiber optic AT&T submarine telecommunications cable terminated at the Makaha cable station. A junction box will be connected to the sea cable termination using a hybrid fiber/electrical connector. On the same frame will be two hydrophones and a pressure sensor. This is then connected to the observatory frame with the main power supply and the observatory module that distributes power, communications, and timing to eight user ports. On this frame are two ADCPs and a CTD.



ACO components being test at the HURL Makai Pier facility.

A secondary node will be installed that will support additional CTDs, a fluormeter and a video camera package with lights and another hydrophone, as well as providing additional user ports for future expansion. A nearby 200-m high mooring with a thermistor string and acoustic modem will be connected to the observatory. A data management system is being implemented that will allow real time access to the data via the Internet.

After installation, we will be submitting many proposals to add various fixed and mobile assets, e.g., moorings with profilers and acoustic sources and receivers, bottom nodes both cabled and autonomous communicating acoustically, and AUVs with docking stations. These will extend the footprint of the single node over a much larger geographical area in a nested way to improve the temporal and spatial sampling, enabling new and innovative science experiments and monitoring.

Dynamics of Cross Shore …

Continued from page 4

The same occurs during nighttime cooling. Additional analysis and new field observations are presently underway that aim to characterize this exchange flow over greater time and spatial scales.

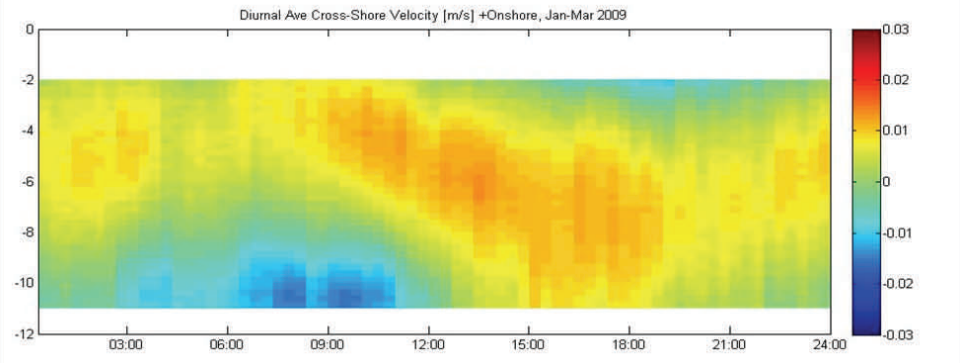


Figure 3. Diurnal pattern in the cross-shore flow is offshore at the bottom in the morning and offshore at the surface in the afternoon.

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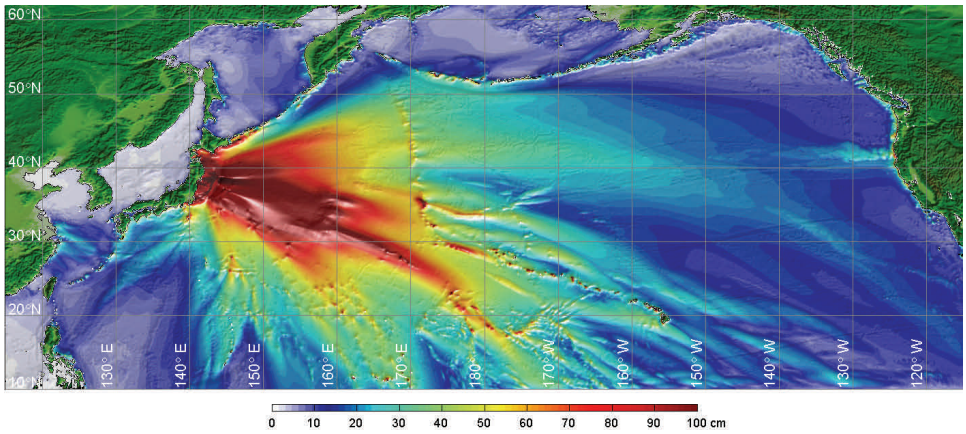
Monismith, Stephen, Amatzia Genin, Matthew A. Reidenbach, Gitai Yahel, and Jeffrey R. Koseff. 2006. "Thermally Driven Exchanges between a Coral Reef and the Adjoining Ocean". *Journal of Physical Oceanography*, 36: 1332-1347.

ORE & Japan Tsunami

The Tohoku-oki Earthquake and Tsunami of March 11, 2011

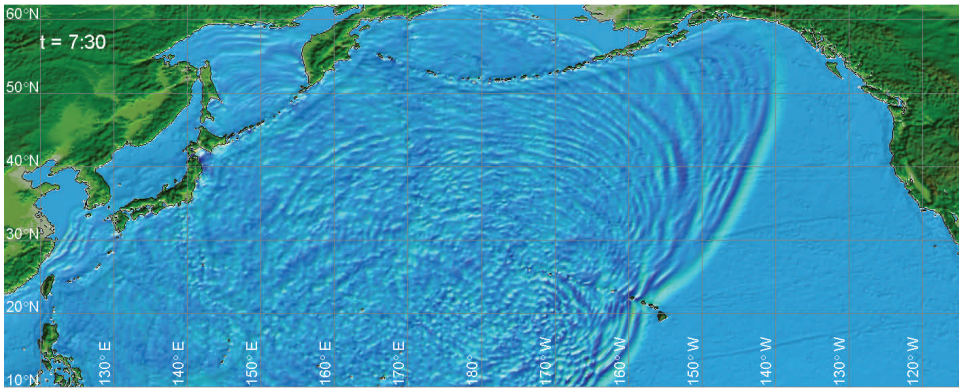
Kwok Fai Cheung



Amplitude of the Tohoku-oki tsunami across the Pacific (courtesy of Yoshiki Yamazaki, ORE Post-doctoral Fellow).

The Tohoku-oki great earthquake of M_W 9.0 ruptured the megathrust fault offshore of Miyagi and Fukushima in northeastern Honshu on March 11, 2011, generating strong shaking across the region and a devastating near-field tsunami with run-up heights of more than 10 m. The tsunami, which registered 6.7 m amplitude at a coastal GPS buoy and 1.75 m at an open-ocean DART buoy, triggered warnings and panics across the Pacific. The waves reached Hawaii at 3:00 am, 7 hours after the earthquake, and caused localized damage across the island chain. Kauai experienced relatively minor wave actions despite its open location to the approaching tsunami. Damage on Oahu and Maui are limited to its harbors. Kahului Harbor experienced the largest wave and one third of a mile of inundation two hours after the arrival of the tsunami. Hawaii Island sustained infrastructure and property damage on the west side, where the run-up heights exceeded 5 m. The Pacific Tsunami Warning Center did not drop the warning until 8:36 am on March 12, 2011, when the amplitude of water-level oscillations reduced to less than 1 m around the islands.

This is the best instrumentally recorded great earthquake and tsunami to date due to the extensive global seismic networks, the dense geodetic networks across Japan, the GPS buoys right next to the source, and the numerous tide gauges and DART buoys across the Pacific. Independent studies in the US and Japan have confirmed a region of 15 to 30-m slip (tectonic plate movement) at shallow depth extending to the trench. These values are high in comparison to earthquakes of comparable moment magnitude. Together with the low rupture velocity, the Tohoku-oki event has some characteristics in common with *tsunami earthquakes*, which was coined by Hiroo Kanamori in 1972 for megathrust earthquakes that generate much larger tsunamis than what their magnitude would imply. The seismic source mechanism, which has been validated by geodetic and buoy data, provides the input to ORE's NEOWAVE for post-event analysis of the tsunami from generation at the source to inundation at distant coastlines.



Propagation of the Tohoku-oki tsunami across the Pacific (courtesy of Yoshiki Yamazaki, ORE Post-doctoral Fellow).

Preliminary model results show the seafloor deformation generates an inital tsunami wave of 15 m amplitude 2.5 min after the earthquake and the first positive wave of 9 m amplitude hits the Miyagi and Fukushima coasts in 30~40 min. The resonance oscillations along the continental margin from Tokyo to Kamchatka produce waves of up to 200 min period across the Pacific. Shelf resonance with very similar long-period waves also occurred during the 2010 Chile tsunami. While the main tsunami waves pass south of Hawaii, underwater ridges to the west of Midway focus the energy toward the southwest side of Hawaii Island. The tsunami also generates resonance oscillations along the Hawaiian Island chain with periods up to 75 min exceeding the longest period of 42 min previously reported for the 2006 Kuril Islands tsunami. Records by GPS buoys, DART buoys, and tide gauges have validated these model results. ...

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ORE & Japan Tsunami

The Tohoku-oki Earthquake …

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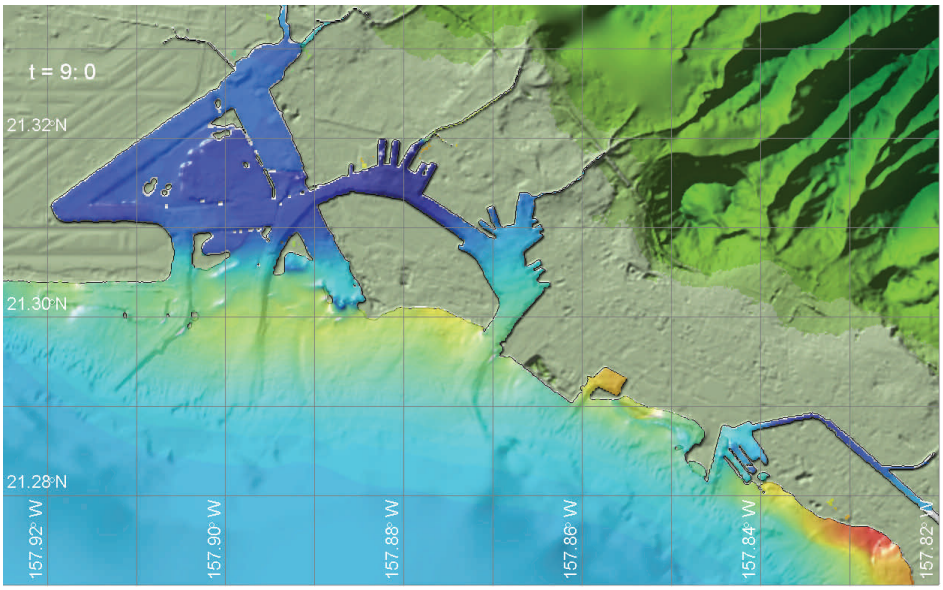
Resonance oscillations provide the only explanation for the erratic water-level fluctuation and inundation at Kahului Harbor during the tsunami as well as the seiches observed in harbors, marinas, and waterways around the Hawaiian Islands. Hanauma Bay was closed for three days after the tsunami due to strong currents.

The Tohoku-oki earthquake and tsunami, despite the destruction and devastation, provided a wealth of information for scientific research and model validation. This will improve our understanding of megathurst earthquakes, tsunami generation mechanisms, large-scale resonance, and formation of undular bores as well as our capability to predict these events for hazard mitigation and emergency management.



Seiches on Oahu's south shore (courtesy of Yoshiki Yamazaki, ORE Post-doctoral Fellow).

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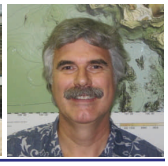
Kanamori, H. (1972). Mechanism of tsunami earthquakes. *Physics of the Earth and Planetary Interiors*, **6**(5), 346-359.

Lay, T., Yamazaki, Y., Ammon, C.J., Cheung, K.F., and Kanamori, H. (2011). The great 2011 Tohoku-oki (Mw 9.0) earthquake: Comparison of deep-water tsunami signals with finite-fault rupture model predictions. *Earth, Planets and Space*, **63** (special issue), in review.

Munger, S. and Cheung, K.F. (2008), Resonance in Hawaii waters from the 2006 Kuril Islands Tsunami, *Geophysical Research Letters,* **35**(7), L07605, doi: 10.1029/2007GL032843.

Yamazaki, Y. and Cheung, K.F. (2011). Shelf resonance and impact of near-field tsunami generated by the 2010 Chile earthquake. *Geophysical Research Letters*, **38**, doi: 10.1029/2011GL047508, in press.

Link Fellowship



R.C. Ertekin and J.C. Wiltshire

Masoud Hayatdavoodi, our department TA and a PhD student, has received two significant awards. First, he received the Outstanding ORE Graduate Student Award for 2010-2011, in recognition of his accomplishments and academic success as a graduate student. It also recognized the positive impact that he has had on those in our Department, fellow students, staff and faculty alike. Second he has won the prestigious Link Foundation Ocean Engineering Fellowship for 2011-2012. This $25,000 award is the largest student prize in ocean engineering in the world.

The Link award is provided by the Link Foundation to honor its namesake Edwin A. Link, pioneer in aviation, underwater archeology and ocean engineering. Link made his fortune by inventing the 'Link Trainer', commercialized in 1929 and initiating the now multi-billion dollar flight simulation industry. The Trainer resulted from the cost of flying lessons being too high in the great depression and a clever engineer (Link) adapting bellows, supports and other pieces of his father's organ building business into the Trainer which pitched and rolled on its pedestal like a real aircraft. Link patented and delivered over 7,000 of the Trainers to the U.S. military by the end of World War II. His fortune made, he turned to ocean engineering, pioneering lock-out submersibles, decompression chambers and a variety of equipment for deeper, longer lasting and more secure diving. With 27 patents in hand, he established the Link Foundation in 1953, which has subsequently passed out $12 million dollars of Link's personal fortune to aspiring engineers, most recently to Masoud.

Masoud has been working on his Ph.D. under the guidance of Prof. Ertekin and has done ground breaking work looking at the loading and damage to coastal bridges from storm surges and waves. Starting this summer, he will become one of the Research Assistants working on the "Coastal Bridge and Port Vulnerability to Tsunami and Storm Surge" project funded by State of Hawaii's Department of Transportation. Another Ph.D. student of Prof. Ertekin, Betsy Seiffert, is also working on the same project, concentrating on tsunami loads on coastal bridges.

Masoud is currently studying the wave loads on submerged coastal bridge spans (see Figure 1) by numerically solving the Green-Naghdi equations that are nonlinear and dispersive shallow water equations. With the ever increasing recognition of the damage caused by storm waves and tsunamis, and the growing recognition of the increasing severity of storm surges partially because of global warming, this work is particularly timely.

It is very gratifying that UH is producing students such as Masoud who are achieving this level of national prominence.

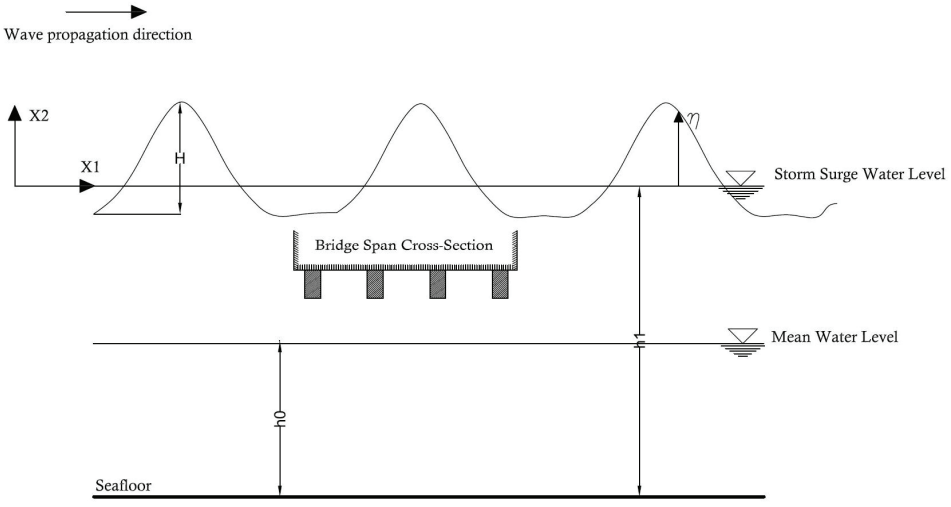


Figure 1. Storm waves and surge around a coastal bridge span, modeled for numerical solution of the Green-Naghdi equations.

Alumni

In this issue of the newsletter, we are featuring three of the recently graduated ORE fellows. Some of them chose ORE as their next stop which you will learn about it. They were all asked same following questions. Notice that the page is continued on page 11.

Questions:

1. Name?
2. Admission year?
3. Graduation Date?
4. Graduation level (MS, Ph.D. or Visiting Scholar)?
5. Advisor?
6. Thesis/Dissertation title?
7. City and Country that you live in now?
8. One thing you liked the most about ORE?
9. One thing you would change in ORE?
10. A short description about your current professional life?
11. Something about your current personal life that you would like to share with others?
12. A message to the current ORE students, faculty and staff?

1. Volker Roeber

2. Fall 2003
3. 07 December 2010
4. PhD
5. Dr. Kwok Fai Cheung
6. Boussinesq-Type Model For Nearshore Wave Processes In Fringing Reef Environment (this included the development of a numerical nearshore wave model together with laboratory wave experiments)
7. Honolulu, HI, USA
8. I appreciate the opportunities that I was given in ORE, e.g. I spent several months at Oregon State University where I conducted laboratory experiments.
9. ORE needs an experimental wave research facility. Well, this is probably easier said than done ...
10. I am currently working as a postdoc for Dr. Cheung. My work mainly focuses on numerical modeling of hazardous waves, such as tsunamis, hurricanes, or large swell events. The numerical model (BOSZ) that I developed has been approved by the National Tsunami Hazard Mitigation Program for inundation modeling. Besides that, I am coordinating the Oahu tsunami observer team for Oahu Civil Defense.
11.
12.

1. Simone Memé

2. January 2010
3. December 2010
4. Visiting scholar
5. Dr. Nihous
6. Renewable Energy
7. Canary islands, Spain
8. The friendship between most of the students
9. Create some windows in the 407 and adjacent rooms
10. Economical evaluation of renewable energy projects under the ISLE PACT european framework
11. I'm trying to keep the ALOHA spirit with me
12. Enjoy Hawaii and try to work for a sustainable growth, not just for yourself!

New in ORE

Welcome to ORE. Four new fellows joined the department in Spring 2011. Below, we will learn more about them. They all responded to the following questions. Notice that the page is continued on page 11.

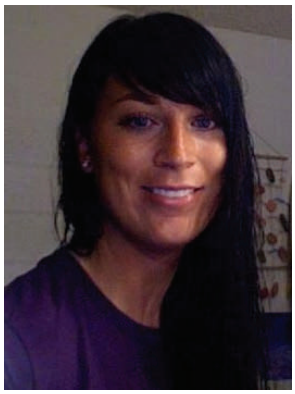
Questions:

1. Name
2. Level of study
3. Your academic background
4. Your research topic in the department
5. Your advisor
6. Where is your office?
7. Only after being here for a short time, what has attracted your attention about the program and the department the most?
8. Anything else you would like to share with others?

1. Jean-Francois Filipot

2. Post-doctoral
3.
4. A part of my work is related to wave forecasting and hindcasting for renewable wave energy applications. Another goal is to improve the results of the spectral wave models (like SWAN) for wave breaking over fringing reefs.
5. Prof. Cheung
6. HIG 322
7. I really like the large spectrum of scientific issues tackled at ORE and the nice atmosphere of this lab.
8. I want to improve my English speaking and meet other people, so do not hesitate to stop by my office and let's talk!

1. Nina Ribbat



2. Ph.D
3. Bs in Mathematics, Bs in Oceanography, M.Sc in Physics
4. Tsunami Modeling
5. Dr. Cheung
6. Holmes Hall 408
7. The high level of proficiency of the faculty and the very welcoming environment
8.

1. Lora Van Uffelen

2. Assistant Researcher
3. Ph.D. in Oceanography from the Scripps Institution of Oceanography, B.S. in Engineering from Hope College.
4. Ocean acoustics, internal waves, and gliders.
5. I am working with Bruce Howe, Eva-Marie Nosal, and Glenn Carter initially.
6. MSB M-9. Stop by and say hi!
7. It seems there is a lot of experimental work going on just offshore here all the time, which makes for a vibrant research environment.
8.

New in ORE ... Continued from page 10.

For questions refer to page 10.

1. Shaun Williams

2. Visiting Student Researcher towards a PhD at the University of Canterbury NZ.
3. MSc. (First Class Honors), University of Canterbury, 2009.
   BSc., The University of the South Pacific, 2003.
4. Tsunami resonance modeling in the Samoa Islands (Independent State of Samoa) using the NEOWAVE numerical model developed at ORE.
5. Dr. K.F. Cheung
6. Room 408
7. The friendliness, helpfulness, and aloha culture of ORE and the research team I am working in and learning from. It is an outstanding team and I feel very honored and privileged to be working alongside them.
8.

ORE Alumni ... Continued from page 9.

Questions:

1. Name?
2. Admission year?
3. Graduation Date?
4. Graduation level (MS, Ph.D. or Visiting Scholar)?
5. Advisor?
6. Thesis/Dissertation title?
7. City and Country that you live in now?
8. One thing you liked the most about ORE?
9. One thing you would change in ORE?
10. A short description about your current professional life?
11. Something about your current personal life that you would like to share with others?
12. A message to the current ORE students, faculty and staff?

1. Blue Eisen

2. Fall 2007
3. Dec 2010
4. MSc.
5. Eva Nosal
6. Passive Acoustic Detection of Minke Whales
7. Honolulu HI
8. The ability to shape your education and research based on your own interests.
9. More consistent offering of classes for the offshore option.
10. I am happy to be able to stay in Hawaii and have the type of work I had hoped for when I started the ORE program. I am now working at Pacific Shipyards International as an Assistant Project Manager.
11. If it is my personal life doesn't that mean that I don't want to share.
12. Thank you to all my classmates and professors. My ORE experience was a great part of my life and has helped me build the skills and knowledge to move forward toward my dreams.

Final Page

Your Gift to the ORE Enrichment Fund

THE ORE ENRICHMENT FUND
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Yes, I'll support

My gift is:

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□ A matching gift program is offered through my (or my spouse's) employer, _____(form enclosed)

□ The gift is in memory/honor of _____

Name(s): _____

Address: _____

_____

E-mail: _____

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Eml: adminore@hawaii.edu, Tel: +1 (808) 956-7572, Fax: +1 (808) 956-3498

Simone Meme, unable to find a surfing break in Tenerife island in Spain, sent a message to ORE:
… remember, try to enjoy what you have there [Hawaii] ..once you leave you won't have it anymore..and [it] is not easy to find a beautiful nature like there!

ORE since 1966 OCEAN AND RESOURCES ENGINEERING

Hana O Ke Kai
Newsletter of the
Department of Ocean and Resources Engineering
School of Ocean and Earth Science and Technology
University if Hawaii at Manoa

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ENGINEERING THE OCEANS SINCE 1966!