

# Nikos Kalligeris

Principal Researcher, Institute of Geodynamics, National Observatory of Athens, Greece

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## Education

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### University of Southern California

Los Angeles, USA

PHD IN CIVIL ENGINEERING

2012–2017

- Thesis: «Tsunami-induced turbulent coherent structures». Advisors: Patrick Lynett & Costas Synolakis.

### Technical University of Crete

Chania, Greece

MSC IN ENVIRONMENTAL ENGINEERING

2006–2010

- Thesis: «Submarine Landslides & Tsunami». Advisor: Costas Synolakis.

### Imperial College, University of London

London, UK

MSC IN CIVIL ENGINEERING

2004–2005

- Specialized in Earthquake Engineering.
- Thesis: «Behaviour of Reinforced Concrete Slabs under Extreme Loading Conditions». Advisor: Ahmed Elghazouli.

### University of Brighton

Brighton, UK

BENG IN CIVIL ENGINEERING

2001–2004

- Thesis: «Wave attenuation through a rock breakwater. Examination of the hydraulic performances of the breakwater scheme in Elmer, West Sussex, UK». Advisor: Kaiming She.

## Professional experience

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### IOC/UNESCO North-Eastern Atlantic, Mediterranean and connected seas Tsunami Warning System (NEAMTWS)

REPRESENTATIVE OF GREECE

Sep. 2019 - present

- Head of ICG Greek delegation
- Tsunami National Contact
- Member of the Task Team on Tsunami Exercises

### National Observatory of Athens

Athens, Greece

PRINCIPAL RESEARCHER

Jul. 2019 - present

- Tsunami early warning - operational head of Hellenic National Tsunami Warning Center
- Tsunami hazard assessment.

### University of California, Los Angeles

Los Angeles, USA

POST-DOCTORAL SCHOLAR

Oct. 2017 - Mar. 2019

- Beach erosion/evolution.
- Coastal flood modeling.
- Uncertainty in wave overtopping predictions

### University of Southern California

Los Angeles, USA

PHD STUDENT/RESEARCH ASSISTANT

Aug. 2012 - 2017

- Experimental study of tsunami-induced turbulent coherent structures in a harbour environment.
- Field measurements of tsunami-induced currents.
- Hydrodynamic modelling of tsunami and wind waves.
- Tsunami source inversion.
- Earthquake & tsunami case studies.
- Harbor resonance.

## Technical University of Crete

Chania, Greece

### RESEARCH ASSISTANT

2007 - 2012

- Hydrodynamic modeling of tsunamis.
- Historical earthquake & tsunami case studies.
- Tsunami hazard studies & field surveys.
- Identification and characterisation of tsunami sources in the eastern Mediterranean—develop a database of tsunami sources.
- Wave field measurements (instrument deployment and data post-processing).
- Beach erosion case studies.

## Technical University of Crete

Chania, Greece

### TEACHING ASSISTANT

2006 - 2007

- Water Resources Management, fall semester of academic year 2006–2007.
- Environmental Hydraulics, spring semester of academic year 2006–2007.

## Y Kalligeris & Associate Architects (engineering consulting office)

Chania, Greece

### PART-TIME PROFESSIONAL CIVIL ENGINEER

2005 - 2012

- Reinforced-concrete frame design for new residential buildings.
- Land surveying.

## Participation in research projects

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### ARISTOTLE

Greece

ALL RISK INTEGRATED SYSTEM TOWARDS TRANS-BOUNDARY HO LISTIC EARLY-WARNING, EUROPEAN COMMISSION,

2020

DIRECTORATE-GENERAL HUMANITARIAN AID AND CIVIL PROTECTION - ECHO

- Implementation of a 24/7 group of experts able to provide a scientific support to ERCC in relation to earthquakes and tsunamis
- Synthesize the information into situation assessment reports and maps needed for a timely analysis and monitoring of ongoing events

### Tsunami Last Mile

Greece

PILOT STUDY TO TEST TECHNOLOGIES AND PROCEDURES THAT COULD HELP ALERT LOCAL COMMUNITIES IN CASE OF

TSUNAMIGENIC NEARFIELD EARTHQUAKE EVENTS, JOINT RESEARCH CENTER, EUROPEAN COMMISSION,

2019

DIRECTORATE-GENERAL HUMANITARIAN AID AND CIVIL PROTECTION - ECHO

- Prepare tsunami evacuation map for the city of Kos.
- Support during the installation of the instrumentation of the Last Mile tsunami (local) early warning system in the city of Kos.
- Co-organize and execute the earthquake and tsunami preparedness exercise KOSTWAVE19-LM that was conducted in Nov. 2019 in the city of Kos.

### DECATASTROPHIZE

Greece

USE OF SDSS AND MCDA TO PREPARE FOR DISASTERS OR PLAN FOR MULTIPLE HAZARDS, EUROPEAN COMMISSION,

2017

DIRECTORATE-GENERAL HUMANITARIAN AID AND CIVIL PROTECTION - ECHO

- Combine geo-spatial early warning decision support systems (GE-DSS) with integrated geographic information system (GIS) solutions and multi-criterial decision analysis (MCDA) to fuse text and geographic information into one view.
- Use GE-DSS for rapid deployment, inter-operability, transferability and sustainability to assess, prepare for and respond to multiple and/or simultaneous natural and man-made hazards, disasters, and environmental incidents by using existing models/systems in a synergistic way on one multi-platform.

### NEES-NSF

USA

TSUNAMI INDUCED COHERENT STRUCTURES AND THEIR IMPACT ON OUR COASTAL INFRASTRUCTURE

2013-2017

- Generate a stable tsunami-induced turbulent coherent structure (TCS) in the Oregon State University's tsunami wave basin. Construct a complete kinematic picture of the TCS free surface, using 2D and 3D PTV techniques and wave-gauge measurements.
- Study TCS generation during transient wave forcing and subsequently growth and spin-down.
- Characterize the TCS structure, secondary flow and transition to quasi-two-dimensional flow.

### Project for the Port Authority of Chania

Greece

2010-2012

- Location sensitivity study for the construction of a proposed marina.
- Beach erosion study for the sandy beaches in the municipality of Chania.
- Study of wave amplification and overtopping due to resonance in the Venetian harbor of Chania. A realistic offshore spectrum driven through a fully-nonlinear Boussinesq model (Coulwave) generates infra-gravity wave energy that excites the resonant frequencies of the harbor basin.

## POSEIDON

Greece

SIMULATION EXERCISE POSEIDON: EARTHQUAKE FOLLOWED BY TSUNAMI IN THE MEDITERRANEAN SEA, EUROPEAN UNION, EUROPEAN CIVIL PROTECTION.

2009-2012

- Design a disaster scenario whose resulting intensity and geographical extend will exceed the capacity of the Greek emergency response, and aid will be sought from emergency response agencies of EU partners.
- Provide seismic intensity and tsunami flooding maps for the design scenario - a repeat of the 365 AD west Crete earthquake and tsunami.

## TRANSFER

Greece

TSUNAMI RISK AND STRATEGIES FOR THE EUROPEAN REGION, EUROPEAN UNION, CONTR.NO. 037058.

2007-2009

- Probabilistic tsunami hazard assessment study for Rhodos Island, Greece.

## Honors & Awards

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2017	USC best Ph.D. dissertation in Civil and Environmental Engineering.	<i>Los Angeles, USA</i>
2014–2015	USC Myronis fellowship.	<i>Los Angeles, USA</i>
2012–2016	USC Viterbi School of Engineering fellowship.	<i>Los Angeles, USA</i>

## Specialized training

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### Solutions to Coastal Disasters Conference

*Oahu, Hawaii, USA*

WORKSHOP ON ESTIMATION AND PREVENTION OF COASTAL DISASTERS DUE TO TSUNAMI IMPACTS

13-16 April 2008

### EU project TRANSFER

*Cadiz, Spain*

ADVANCED COMMIT COURSE ON TSUNAMI SIMULATION

1-2 April 2008

### UNESCO-IOC

*Melbourne, Australia*

TRAINING COURSE ON TSUNAMI NUMERICAL MODELLING COURSE II - TSUNAMI MODELLING

10-19 January 2007

## Laboratory experiments

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### Tsunami-induced coherent structures and their impact on our coastal infrastructure.

*Corvallis, OR, USA*

INVESTIGATOR

Jun.-Sep. 2014

- Laboratory experiments conducted in the tsunami basin of Oregon State University, studying the generation and evolution of tsunami-induced turbulent coherent structures.

## Field expeditions

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### The 2006 Java earthquake and tsunami.

*Java, Indonesia*

MEMBER OF THE RECONNAISSANCE TEAM.

Aug. 2006

### The 2007 Solomon Islands earthquake and tsunami.

*Western Province, Solomon Islands*

MEMBER OF THE RECONNAISSANCE TEAM.

Apr. 2007

### The 2007 Peru earthquake and tsunami.

*Pisco, Peru*

MEMBER OF THE RECONNAISSANCE TEAM.

Sep. 2007

### The 1956 Amorgos earthquake and tsunami.

MEMBER OF THE RECONNAISSANCE TEAM.

*Aegean Islands, Greece*

*Jun.-Aug. 2007*

### The 2010 Solomon Islands earthquake and tsunami.

MEMBER OF THE RECONNAISSANCE TEAM.

*Western Province, Solomon Islands*

*Jan. 2010*

### The 2010 Chile earthquake and tsunami.

MEMBER OF THE RECONNAISSANCE TEAM.

*Central Chile*

*Mar. 2010*

### The 2011 Japan earthquake and tsunami.

MEMBER OF THE RECONNAISSANCE TEAM.

*Sendai-Iwate, Japan*

*Jun. 2011*

### The 2018 Sulawesi earthquake and tsunami.

MEMBER OF THE RECONNAISSANCE TEAM.

*Palu, Indonesia*

*Nov. 2018*

### The 2020 south Crete earthquake and tsunami.

LEADER OF THE RECONNAISSANCE TEAM.

*Ierapetra, Greece*

*May. 2020*

### The 2020 Samos-Aegean earthquake and tsunami.

LEADER OF THE NOA RECONNAISSANCE TEAM.

*Samos, Greece*

*Oct. 2020*

## Journal publications

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1. Lentas, K., C.G. Gkarlaouni, N. Kalligeris and N.S. Melis. The 30 October 2020, MW = 7.0, Samos earthquake: aftershock relocation, slip model, Coulomb stress evolution and estimation of shaking. *Bull. Earthquake Eng.*, 2021.
2. Kalligeris, N., V. Skanavis, M. Charalampakis, N.S. Melis, E. Voukouvalas, A. Annunziato, and C.E. Synolakis, C.E. Field survey of the 30 October 2020 Samos (Aegean Sea) tsunami in the Greek islands. *Bull. Earthquake Eng.*, pp.1-33, 2021.
3. Maravelakis, N., N. Kalligeris, P.J. Lynett, V.S. Skanavis and C.E. Synolakis. Wave overtopping due to harbour resonance. *Coastal Engineering*, **169**, 103973, 2021.
4. Kim, Y., N. Kalligeris, T.-J. Hsu and P.J. Lynett. Large eddy simulation study of a wave-induced shallow-water monopolar vortex. *Ocean Modelling*, **162**, 101796, 2021.
5. Kalligeris, N., Y. Kim, and P.J. Lynett, Wave-induced shallow-water monopolar vortex. Large-scale experiments, *J. Fluid Mech.*, **910**, A17, 2021.
6. Kalligeris, N., P. Smit, B.C. Ludka, R.T. Guza and T.W. Gallien. Calibration and assessment of process-based numerical models for beach profile evolution in southern California, *Coastal Engineering*, **158**, 103650, 2020.
7. Gallien, T.W., N. Kalligeris, M.-P. Delisle, B.-X. Tang, J.T.D. Lucey, and M.A. Winters. Coastal flood modeling challenges in defended urban backshores, *Geosciences*, **8**(12), pp. 450, 2018.
8. Kalligeris, N., L.H. Montoya, A. Ayca, and P.J. Lynett, An approach for estimating the largest probable tsunami from far-field subduction zone earthquakes, *Nat. Hazards*, **89**(1), pp. 233–253, 2017.
9. Okal, E.A., S.H. Kirby, and N. Kalligeris, The Showa Sanriku earthquake of 02 March 1933: A global seismological reassessment, *Geophys. J. Intl.*, **206**, pp. 1492–1514, 2016.
10. Kalligeris, N., V. Skanavis, S. Tavakkol, A. Ayca, H. El Safty, P. Lynett, and C. Synolakis, Lagrangian flow measurements and observations of the 2015 Chilean tsunami in Ventura, CA, *Geophys. Res. Lett.*, **4**, pp. 1–8, 2016.
11. Borrero, J. C., P. J. Lynett, and N. Kalligeris, Tsunami currents in ports, *Phil. Trans. R. Soc. A*, **373**, 20140372, 2015.
12. Wei, Y., H.M. Fritz, V.V. Titov, B. Uslu, C. Chamberlin, and N. Kalligeris, Source Models and Near-Field Impact of the 1 April 2007 Solomon Islands Tsunami, *Pure Appl. Geophys*, **172**(3), 2015.
13. Valle, B.L., N. Kalligeris, A.N. Findikakis, E.A. Okal, and C.E. Synolakis, Plausible megathrust earthquakes in the eastern Mediterranean Sea, *Engineering and Computational Mechanics*, **167**, pp. 99-105, 2014.
14. Borrero, J.C., N. Kalligeris, P.J. Lynett, H.M. Fritz, A.V. Newman, and J.A. Convers, Observations and modeling of the August 27, 2012 earthquake and tsunami affecting El Salvador and Nicaragua, *Pure Appl. Geophys*, **171**(12), pp. 3421-3435, 2014.

15. Ebeling, C.W., E.A. Okal, **N. Kalligeris**, and C.E. Synolakis, Modern seismological reassessment and tsunami simulation of historical Hellenic Arc earthquakes, *Tectonophysics*, **530-531**, pp. 225-239, 2012.
16. Flouri, E.T., **N. Kalligeris**, G. Alexandrakis, N.A. Kampanis, and C.E. Synolakis, Application of a finite difference computational model to the simulation of earthquake generated tsunamis, *Appl. Numer. Math.*, **67**, pp. 111-125, 2011.
17. Newman, A.V., L. Feng, H.M. Fritz, Z.M. Lifton, **N. Kalligeris**, and Y. Wei, The energetic 2010 Mw 7.1 Solomon Island Tsunami Earthquake, *Geophys. J. Intl.*, **186**, pp. 775-781, 2011.
18. Fritz, H.M., C.M. Petroff, P.A. Catalan, R. Cienfuegos, P. Winckler, **N. Kalligeris**, R. Weiss, S.E. Barrientos, G. Meneses, C. Valderas-Bermeio, C. Ebeling, A. Papadopoulos, M. Contreras, R. Almar, J.C. Dominguez, and C.E. Synolakis, Field Survey of the 27 February 2010 Chile Tsunami, *Pure Appl. Geophys*, **168**(11), pp. 1989-2010, 2011.
19. Moore, A., J. Goff, B.G. McAdoo, H.M. Fritz, A. Gusman, **N. Kalligeris**, K. Kalsum, A. Susanto, D. Suteja, and C.E. Synolakis, Sedimentary deposits from the 17 July 2006 western Java tsunami, Indonesia: use of grain size analysis to assess tsunami flow depth, speed, and traction carpet characteristics, *Pure Appl. Geophys*, **168**(11), pp. 1951-1961, 2011.
20. Okal, E.A., C.E. Synolakis, and **N. Kalligeris**, Tsunami Simulations for Regional Sources in the South China and Adjoining seas, *Pure Appl. Geophys.*, **168**(6-7), pp. 1153-1173, 2011.
21. Okal, E.A., C.E. Synolakis, B. Uslu, **N. Kalligeris**, and E. Voukouvalas, The 1956 earthquake and tsunami in Amorgos, Greece, *Geophys. J. Intl.*, **178**, pp. 1533-1554, 2009.
22. Fritz, H.M., **N. Kalligeris**, J.C. Borrero, P. Broncano, and E. Ortega, The 15 August 2007 Peru tsunami runup observations and modeling, *Geophys. Res. Lett.*, **35**, L10604, 2008.
23. Fritz, H.M., and **N. Kalligeris**, Ancestral heritage saves tribes during 1 April 2007 Solomon Islands tsunami, *Geophys. Res. Lett.*, **35**, L01607, 2008.
24. Fritz, H.M., W. Kongko, A. Moore, B. McAdoo, J. Goff, C. Harbitz, B. McAdoo, J. Goff, C. Harbitz, B. Uslu, **N. Kalligeris**, D. Suteja, K. Kalsum, V. Titov, A. Gusman, H. Latief, E. Santoso, S. Sujoko, D. Djulkarnaen, H. Sunendar, and C. Synolakis, Extreme runup from the 17 July 2006 Java tsunami, *Geophys. Res. Lett.*, **34**, L12602, 2007.

## Peer reviewed articles (other)

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1. Maravelakis, N., **N. Kalligeris**, P.J. Lynett, and C.E. Synolakis, Case Study of Small Harbor Excitation under Storm Conditions, *14<sup>th</sup> Triennial International Conference on Ports - Gateways to a World of Opportunities (PORTS)*, New Orleans (USA), June 12-15, 2016. doi:10.1061/9780784479902.065.
2. Maravelakis, N., **N. Kalligeris**, P.J. Lynett, V. Skanavis, and C.E. Synolakis, A study of wave amplification in the Venetian harbor in Chania, Greece, *Coastal Engineering Proceedings*, n. 34, p. waves.59, dec. 2014. Presented at: *International Conference on Coastal Engineering*, Seoul, June 15 - 20, 2014.
3. Synolakis, C.E., **N. Kalligeris**, E. Flouri, G. Alexandrakis, and N. Kampanis, The Great Cretan Splash Up-A Coastal Disaster Preparedness Exercise in Greece, *Proceedings of the Solutions to Coastal Disasters Conference*, Anchorage, Alaska, June 26 - 29, 2011.
4. Barberopoulou, A., J. C. Borrero, B. Uslu, **N. Kalligeris**, J. D. Goltz, R. I. Wilson, and C. E. Synolakis, New Maps of California to Improve Tsunami Preparedness, *Eos Trans. AGU*, **90**(16), doi:10.1029/2009EO160001, April 21, Cover Article, 2009.
5. McAdoo, B.A., Fritz, H.M., Jackson, K.L., **Kalligeris, N.**, Kruger, J., Bonte-Grapentin, M., Moore, A.L., Rafiau, W.B., Billy, D., Tiano, B., Solomon Islands tsunami, one year later, *Eos. Trans. AGU*, **89**(18):169-170, April 29, Cover Article, 2008.
6. Ewing, L., C.E. Synolakis, **N. Kalligeris**, S. Foteinis, and E. Voukouvalas, The Role of Regional Sediment Management in Coastal Zone Management, *Coastal Engineering Proceedings*, pp. 4065-4077. Presented at: *International Conference on Coastal Engineering*, Hamburg, August 31 - September 5, 2008.
7. Synolakis, C.E., **N. Kalligeris**, S. Foteinis, and V. Voukouvalas, The Plight of the Beaches of Crete, *Proceedings of the Solutions to Coastal Disasters Conference*, Oahu, Hawaii, April 13 - 16, 2008.
8. Fritz, H.M., and **N. Kalligeris**, The April 2007 Solomon Islands Earthquake, Tsunami, and Land Level Changes, *Proceedings of the Solutions to Coastal Disasters Conference*, Oahu, Hawaii, April 13 - 16, 2008.

## Conference presentations and short abstracts

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1. Fritz, H.M., C. Synolakis, **N. Kalligeris**, V. Skanavis, F. Santoso, M. Rizal, G.S. Prasetya, Y. Liu and P.L-F. Liu. Field survey of the 28 September 2018 Sulawesi tsunami, *AGU Fall Meeting*, December 10-14, 2018, Washington D.C. USA, abstract No. NH22B-04.
2. Han, S., J.M. Kaihatu, J. Goertz, C. Synolakis, P. J Lynett and **N. Kalligeris**. Tsunami propagation around offshore islands, *AGU Fall Meeting*, December 10- 14, 2018, Washington D.C. USA, abstract No. NH41C-0984.
3. Kim, Y., **N. Kalligeris**, T.-J. Hsu and P.J. Lynett. Large eddy simulation of tsunami-induced turbulent coherent structures in a 3D wave basin, *AGU Fall Meeting*, December 10-14, 2018, Washington D.C. USA, abstract No. NH43E- 1096.
4. **Kalligeris, N.** and P.J. Lynett. Large-scale experiments on wave-induced shallow turbulent coherent structures, Presented at: *36th International Coherence on Coastal Engineering*, Baltimore USA, July 30-August 3, 2018, abstract No. 1774.
5. Synolakis, C, **N Kalligeris**, V Skanavis, S Tavakkol, A Ayca, H ElSafty, and P Lynett, Tsunami-induced currents in Ventura CA harbor from the 2015 Chilean M8.3 earthquake, Presented at: *Intenational Conference on Coastal Engineering*, Antalya, Turkey, 17-20 November, 2016.
6. Synolakis, C, N Maravelakis, **N Kalligeris**, V Skanavis, U Kanoglu, A Yalciner, and P Lynett, Case study of small harbor excitation under storm and tsunami conditions, Presented at: *EGU General Assembly*, 17-22 April, Vienna 2016, abstract No. EGU2016-13825-2.
7. Lynett, P J, **N Kalligeris** and A Ayca, Large-Scale Physical Modelling of Complex Tsunami-Generated Currents, Presented at: *AGU Fall Meeting*, 15-19 December, San Francisco 2014, abstract No. S13E-07.
8. Skanavis, V, S Foteinis, G Sartzetakis, K Papadogiannis, **N Kalligeris**, and C Synolakis, Erosion of the beaches of Crete, Greece, Presented at: *AGU Fall Meeting*, 15-19 December, San Francisco 2014, abstract No. OS23B-1195.
9. Skanavis, V, N Maravelakis, **N Kalligeris**, C Papadogiannis, G Sartzetakis, and C Synolakis, Coastal retreat in Chanea, Greece, Presented at: *EGU General Assembly*, 27 April-02 May, Vienna 2014, abstract No. EGU2014-15408.
10. Okal, E A, C de Beer, J Visser, and **N Kalligeris**, The rogue wave of 27 August 1969 at Dwarskersbos, South Africa: Field survey and simulation as a meteo-tsunami, Presented at: *EGU General Assembly*, 7-12 April, Vienna 2013, abstract No. EGU2013-1571.
11. Foteinis, S, V Skanavis, N Maravelakis, **N Kalligeris**, G Sartzetakis, V Voukouvalas, I Koutsogiannaki, and C Synolakis, Anthropogenic erosion in Aghios Nikolaos, Greece, Presented at: *EGU General Assembly*, 7-12 April, Vienna 2013, abstract No. EGU2013-9387.
12. Valle, B, **N Kalligeris**, A Findikakis, E Okal, and C Synolakis, Tsunami simulations for historical and plausible mega-thrust events originating in the Eastern Mediterranean Sea, Presented at *EGU General Assembly*, 7-12 April, Vienna 2013, abstract No. EGU2013-12829-3.
13. Yalciner, A, F Imamura, E Mas, I Necmioglu, C Ozer, A Zaytsev, S Takahashi, T Tomita, G Yon, **N Kalligeris**, H Fritz, V Skanavis, C Synolakis and N Meral Ozel, Fiels srvey of the coastal impact of the March 11, 2011 great East Japan tsunami, Presented at: *EGU General Assembly*, 22-27 April, Vienna 2012, abstract No. EGU2012-11588-1.
14. Ebeling, C W, E A Okal, **N Kalligeris**, and C E Synolakis, Modern seismological reassessment and tsunami simulation of historical Hellenic Arc earthquakes, Presented at: *EGU General Assembly*, 22-27 April, Vienna 2012, abstract No. EGU2012-11809.
15. **Kalligeris, N**, E Flouri, E Okal, and C Synolakis, The AD 365 earthquake: high resolution tsunami inundation for Crete and full scale simulation exercise, Presented at: *EGU General Assembly*, 22-27 April, Vienna 2012, abstract No. EGU2012-11787.
16. Kanoglu, U, O Hoto, **N Kalligeris**, E Flouri, B Aydin, C W Moore and C E Synolakis, Tsunami propagation database for the Mediterranean and Aegean Seas, Presented at: *AGU Fall Meeting*, 3-7 December, San Francisco 2012, abstract No. NH33A-1666.
17. Valle, B L, **N Kalligeris**, E A Okal, A N Findikakis and C E Synolakis, Tsunami simulations for plausible mega-thrust events originating along the Hellenic Arc and Cyprian Arc in the Eastern Mediterranean Sea, Presented at: *AGU Fall Meeting*, 3-7 December, San Francisco 2012, abstract No. NH33A-1668.
18. Giannakidis, A, G Papadakis, **N Kalligeris** and G Giakoumidakis, Photo-realistic simulation of tsunami impacts using foss gis tools and blender, Presented at: *Blender Conference*, 28-30 October, Amsterdam, 2011.
19. Yalciner, A C, A Suppasri, E Mas, **N Kalligeris**, O Necmioglu, F Imamura, C Ozer, A Zaytsev, C Synolakis, S Takahashi, T Tomita, and G Yon, Field Survey on the Coastal Impacts of March 11, 2011 Great East Japan Tsuanmi, Presented at: *AGU Fall Meeting*, 05-09 December, San Francisco 2011, abstract No. NH11A-1360.

20. Aydin, B, C W Moore, **N Kalligeris**, and U Kanoglu, Modeling of Tsunami Propagation and Inundation in the Aegean Sea, Presented at: *AGU Fall Meeting*, 05-09 December, San Francisco 2011, abstract No. NH21D-1532.
21. Prasetya, T, P Hajadi, C Nugroho, E Okal, C Synolakis, and **N Kalligeris**, Field survey and preliminary modeling of the 2011 Tohoku tsunami at Jayapura, Papua, Indonesia, Presented at: *AGU Fall Meeting*, 05-09 December, San Francisco 2011, abstract No. NH11A-1351.
22. Fritz, H M, C M Petroff, P A Catalan, R Cienfuegos, P Winckler, **N Kalligeris**, R Weiss, G Meneses, C W Ebeling, A Papadopoulos, M Contreras, R Almar, J Dominguez, S E Barrientos, and C E Synolakis, The Chile tsunami of 27 February 2010: Field survey and modeling (invited), Presented at: *AGU Fall Meeting*, 05-09 December, San Francisco 2011, abstract No. S14A-03.
23. Synolakis, C E, H M Fritz, C Petrov, R Weiss, P A Catalan, R Cienfuegos, P Winkler, **N Kalligeris**, C Ebeling, and S E Barrientos, The Chile tsunami of 27 February 2010: Field survey and modeling, Presented at: *EGU General Assembly*, 03-08 April, Vienna 2011, abstract No. EGU2011-12772.
24. Synolakis, C E, H M Fritz, C Petrov, P R Catalan, P Winkler, **N Kalligeris**, R Weiss, G Meneses, C Valderas-Bermejo, C W Ebeling, A Papadopoulos, M Contreras, R Almar, J C Dominguez, and S E Barrientos, Observations and modeling of the 27 February 2010 Tsunami in Chile, Presented at: *AGU Fall Meeting*, 13-17 December, San Francisco 2010, abstract No. G31B-03.
25. **Kalligeris, N**, H M Fritz, A V Newman, L Feng, Z M Lifton, Y Wei, V V Titov, and B U Uslu, Comparison of the 2010 and 2007 Solomon Island Tsunamis, Presented at: *AGU Fall Meeting*, 13-17 December, San Francisco 2010, abstract No. NH12A-07.
26. Fritz, H M, C M Petroff, P A Catalan, R Cienfuegos, P Winckler, **N Kalligeris**, R Weiss, G Meneses, C W Ebeling, A Papadopoulos, M Contreras, R Almar, J Dominguez, S E Barrientos, and C E Synolakis, Reconnaissance of the 27 February 2010 Tsunami in Chile, Presented at: *AGU Americas Conference*, 8-12 August 2010, Foz do Iguaçu, Brasil: abstract No. U41A-16.
27. Feng, L, A V Newman, Z Lifton, H Fritz, and **N Kalligeris**, Geodetic Constraints of the Anomalously Tsunamigenic 2010 MW 7.1 Solomon Islands Earthquake, Presented at: *AGU Western Pacific Geophysics Meeting*, 22-25 June, Taipei, Taiwan, 2010, abstract No. T31B-06.
28. Fritz, H M, and **N Kalligeris**, Field survey of the Solomon Islands tsunami of 03 January 2010, Presented at: *EGU General Assembly*, 02-07 May, Vienna 2010, abstract No. EGU2010-7027.
29. Valle, B L, **N Kalligeris**, C E Synolakis, and A N Findikakis, Simulations of Tsunami Generation, Propagation, and Runup from a Potential Submarine Mass Failure at the East Breaks Slump in the Gulf of Mexico, Presented at: *AGU Ocean Sciences Meeting*, 22-26 February, Portland, USA, 2008, abstract No. PO45X-05.
30. Synolakis, C.E., S. Foteinis, V. Voukouvalas, and **N. Kalligeris**, Erosion in the Beaches of Crete, Presented at: *EGU General Assembly*, 19-24 April, Vienna 2009, abstract No. EGU2009-5147.
31. **Kalligeris, N**, E A Okal, and C E Synolakis, Tsunami Simulations for Regional Sources in the South China and Adjoining Seas, Presented at: *EGU General Assembly*, 19-24 April, Vienna 2009, abstract No. EGU2009-4990.
32. Ewing, L, S Foteinis, **N Kalligeris**, A Palaiologou, and C E Synolakis, The plight of the beaches of Greece, Presented at: *AGU Fall Meeting*, 15-19 December, San Francisco 2008, abstract No. OS21E-1230.
33. Borrero, J C, H M Fritz, **N Kalligeris**, and E Ortega, Near Source 2007 Peru Tsunami Runup Observations and Modeling, Presented at: *AGU Fall Meeting*, 15-19 December, San Francisco 2008, abstract No. OS43D-1341.
34. **Kalligeris N**, C E Synolakis, and E A Okal, Simulations of Tsunami Hazard from Regional Sources in the South China and Adjoining Seas, Presented at: *AGU Fall Meeting*, 15-19 December, San Francisco 2008, abstract No. OS54B-1317.
35. Fritz, H M, and **N Kalligeris**, Comparison of the 2007 Solomon Islands and Peru tsunami, Presented at: *Western Pacific Geophysics Meeting*, 29 July - 01 August, Cairns, Australia, 2008, abstract No. U41A-03.
36. Fritz, H M, **N Kalligeris**, and J C Borrero, Peru 2007 tsunami runup observations and modeling, Presented at: *AGU Joint Assembly*, 27-30 May, Fort Lauderdale, Florida USA, 2008, abstract No. H53B-01.
37. Fritz, H M, and **N Kalligeris**, Tsunami Awareness Saves Solomon Islanders on 1 April 2007, Presented at: *AGU Fall Meeting*, 10-14 December, San Francisco 2007, abstract No. S51C-05.
38. Fritz, H M, J Goff, C Harbitz, B McAdoo, A Moore, H Latief, **N Kalligeris**, W Kodjo, B Uslu, V V Titov, and C Synolakis, The 17 July 2006 Java Earthquake and Tsunami: What Are We Learning?, Presented at: *AGU Fall Meeting*, 11-15 December, San Francisco 2006, abstract No. S14A-06.

## Proposal writing experience

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While not credited as a PI or a co-PI due to my student status, I have actively participated in the writing and preparation of the following proposals:

- Participant on “Simulation exercise POSEIDON: Earthquake followed by a tsunami in the Mediterranean Sea”, awarded to the Direction of Civil Protection, Region of Crete. European Commission contribution: € 535K, 2009-2012.
- Participant on “Research on the siting of a proposed marina, wave climate of the Venetian harbor of Chania, and the evolution of beaches in the municipality of Chania”, awarded to the Technical University of Crete. Port Authority of Chania contribution: € 125K, 2010-2012.

## Students mentored

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Dimitris Marmanis (BEng, TUC), *”3D visualization of the 365 A.D. tsunami in the Venetian harbor of Chania using ArcGIS”*, 2010.

Giannis Giakoumidakis (BEng, TUC), *”Methodology development for the photorealistic rendering of tsunami waves - application for the 365 A.D. tsunami in the harbor of Heraklion, Crete”*, 2014.

Sophia Palumbo, Kaleigh McLaughlin and Ariana Mendible, undergraduate students mentored during the laboratory experiments of the NEES-NSF project with title *”Tsunami Induced Coherent Structures and their Impact on our Coastal Infrastructure”*. The students actively participated in research as part of the NEES-NSF-funded Research Experience for Undergraduates (REU) program.

## Appearance in the news

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- *Tsunami risk is real*, Chania News, 04/05/2020 (in Greek). [link](#)
- *The world’s pool of knowledge just got deeper*, USC Viterbi School of Engineering News, 05/12/2017. [link](#)
- *Researchers study tsunami effects at Ventura Harbor*, Ventura Country Star, 09/17/2015. [link](#)
- *Tsunami researchers watch for waves from Chile quake*, Nature News, 09/17/2015. [link](#)
- *Tsunami hazards: experimental work on tsunami currents in ports*, Smithsonian Documentary, 08/10/2014.
- *Wave of 7 meters was recorded in Chania*, Chania News, 08/01/2014 (in Greek). [link](#)
- *Featured research assistant for August 2013: Nikos Kalligeris*, USC Website, 07/31/2013. [link](#)
- *Tsunami field work in the islands of Juan Fernandez, Chile*, Channel 4 News (UK), 2010. [link](#)
- *Hundreds feared dead after Pacific tsunami*, Nature News Blog, 09/30/2009. [link](#)

## Reviews for scientific journals

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Geophysical Research Letters

Pure and Applied Geophysics

Journal of Geophysical Research, Earth Surface

Natural Hazards and Earth System Sciences

Geosciences, MDPI

Water, MDPI

Scientific Reports

European Journal of Mechanics - B/Fluids

Journal of Waterway, Port and Coastal and Ocean Engineering

International Journal for Numerical Methods in Fluids

Journal of Ocean Engineering and Science

## Memberships

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Technical Chamber of Greece

[Greece](#)



## Computer skills

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<b>Operating Systems</b>	MacOS, Windows, Linux
<b>Technical computing</b>	Matlab, Mathematica, Fortran
<b>Office Suites</b>	TEX, Microsoft Office
<b>Mapping software</b>	Generic Mapping Tools (GMT)
<b>G.I.S.</b>	AcrGIS
<b>Engineering Design software</b>	AutoCAD
<b>Hydrodynamic models</b>	MOST, COULWAVE, XBeach, SWASH
<b>Morphodynamic models</b>	XBeach

## Languages

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<b>Greek</b>	Native
<b>English</b>	Proficient, in both writing and speaking
<b>German</b>	Understanding > speaking > writing
<b>Italian</b>	Basic

## Other personal information

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**Citizenships** Greek, Swiss