

# Curriculum Vitae of Maria I. Todorovska

## Current Position and Affiliation

Professor  
School of Civil Engineering  
Director  
Strong Motion Observation and Simulation Laboratory  
Tianjin University  
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Research Group Web Site: <http://earthquake-eng.usc.edu/>

## Specialty:

Earthquake Engineering, Engineering Seismology, Mechanics, Signal Processing

Topics: Structural system identification and health monitoring; Soil-structure interaction; Strong ground motion and seismic hazard; Vibrations generated by underground rail traffic; Wave propagation in soils and structures; Tsunami near field modeling

## Education

Ph.D. - 1988, University of Southern California (Civil Engineering)  
M.Sc. - 1985, University of Southern California (Civil Engineering)  
B.Sc. - 1982, Univ. St. Cyril & Methodius, Skopje, Macedonia (Physics)  
M.Sc. - 1988, University of Southern California (Applied Mathematics)  
M.Sc. - 2001, University of Southern California (Electrical Engineering)

## Academic Appointments

Univ. of Southern California, Dept. of Civil Engineering:

2014–	Adjunct Research Professor		
2005– 2013	Research Professor;	1998– 2004	Research Associate Professor
1992–1998	Research Assistant Professor;	1989 –1991	Research Associate
1984–1987	Research Assistant;	1985 –1987	Teaching Assistant

Univ. of Southern California, Dept. of Mathematics:

1987–1988 Teaching Assistant

Tokyo Science University, Dept. of Architecture:

March 2005 Visiting Professor

Tianjin University, School of Civil Engineering:

2015-2017 Visiting Professor

2017-2020 Tianjin 1000Person Plan Foreign Expert Professor

2020- Professor

## Citation Statistics:

**ORCID ID:** <https://orcid.org/0000-0002-9271-4793>

**Web of Science (Thompson ISI)** (as of 1/25/ 2025)

Entries: 125; Citations: 3,743, **h-index: 36**, citation/article: 29.94

**Google Scholar:** <http://scholar.google.com/citations?user=X9qcF3MAAAAJ&hl=en> (as of 1/25/ 2025)

Citations: 8,389; **h-index 52**; i10-index 147.

**Research.com:** <https://research.com/u/maria-i-todorovska>

Earth Science: **D-index 44**; Citations 5,749; World Ranking 3,820; National Ranking 1,565

Engineering and Technology: **D-index 45**; Citations 6,100; World Ranking 3,679; National Ranking 1,205

**ScholarGPS:** <https://scholargps.com/scholars/72938193706795/maria-i-todorovska>

Publication Count: **123**; Predicted Citations: **5,865**; Predicted h-index: **46** (as of as of 1/25/ 2025)

Ranking (lifetime): in top 0.05% in specialties Earthquake (#50) and Earthquake Engineering (#12); in top 0.4% in Civil and Environmental Engineering.

## Awards and Honors

- Named Highly Ranked Scholar - Lifetime in 2022 and 2023: #10 and #11 in Earthquake Engineering, by ScholarGPS. <https://scholargps.com/scholars/72938193706795/maria-i-todorovska>
- V.H. Joshi Award for Significant Contributions to Structural Dynamics, awarded by Indian Society of Earthquake Technology (ISET), 2022 (shared with Prof. Firdaus Udwadia of USC AME Dept.).
- Paper featured by Wiley on the occasion of the International Women in Engineering Day 2022 (one of 11 papers featured) [https://onlinelibrary.wiley.com/doi/toc/10.1002/\(ISSN\)2689-5595.IWED22](https://onlinelibrary.wiley.com/doi/toc/10.1002/(ISSN)2689-5595.IWED22)  
Todorovska MI, Girmay EA, Wang F, Rahmani M (2022). Wave propagation in a doubly tapered shear beam: model and application to a pyramid-shaped skyscraper, *Earthq. Eng. Struct. Dyn.*, **51**(4):764-792.
- Named among top 2% scientists worldwide in her main subfield discipline in: Ioannidis JPA, Boyack KW, Baas J (2020) "Updated science-wide author databases of standardized citation indicators". *PLoS Biol* **18**(10):e3000918. <https://doi.org/10.1371/journal.pbio.3000918>.
- Named among the top 100,000 scientists worldwide in: Ioannidis JPA, Baas J, Klavans R, Boyack KW (2019) "A standardized citation metrics author database annotated for scientific field". *PLoS Biol* **17**(8): e3000384. <https://doi.org/10.1371/journal.pbio.3000384>
- Tianjin 1000Person Plan Award for Foreign Experts (2017-2020)
- Named among *Top 20 Authors worldwide on the Special Topic Earthquakes for the period 1993-2003* (one of only two earthquake engineers) by Institute of Scientific Information (Thompson ISI).
- Named among *Top 1% Authors in Engineering* for the period 1995-2011 by Institute of Scientific Information (Thompson ISI).
- Named among 18 prominent women in civil engineering in the paper "Presenting Female Role Models in Civil Engineering: An Outreach Activity to Help Teachers Overcome Their Misperceptions of Engineers", by Yin Kiong Hoh, *Int. J. Engineering Education*, Vol. 24, No. 4, pp. 817-824, 2008.
- Kapitza Medal awarded by Russian Academy of Natural Sciences, 2004.
- Foreign Member of Russian Academy of Natural Sciences, 2004.
- Listed in *Who's Who 2005-2006*, Strathmore, Westbury, NY.
- Listed in *America's Registry of Outstanding Professionals 2003-2004*, Westbury, NY.
- Listed in *Who's Who in America 2009*, Marquise, New Providence, NJ.
- Fall 1986 Best Teaching Assistant Award in the Dept. of Civil Engr., Univ. of Southern California.

## Membership in Professional Societies

- Seismological Society of America (SSA), member, 1988-2015; life member, 2016-.
- Earthquake Engineering Research Institute (EERI), member, 1993-2015.
- American Society of Civil Engineers (ASCE), member, 1998-.
- Society for Industrial Applications of Mathematics (SIAM), member, 1998-2009.

- Indian Society of Earthquake Technology (ISET), life member, 1998-.
- American Geophysical Union (AGU), member, 2006-.
- Consortium of Organizations for Strong-Motion Observation Systems, 2000-.
- Experimental Vibration Analysis for Civil Engineering Structures (EVACES), 2023-.

### Membership in Professional Committees and Journal Editorial Boards

- Associate Editor of *Earthquake Engineering and Resilience* (Wiley and Tianjin U.), 2021-
- Associate Editor for Earthquake Engineering of *Frontiers in Built Environment* (Frontiers, Switzerland), 2022-
- Editorial Board Member of *Soil Dynamics and Earthquake Engineering* (Elsevier Science), 2001-.
- Editorial Board Member of *Earthquake Spectra* (EERI, USA), 2008-2014.
- Editorial Board Member of *Geofizika*, (U. Zagreb), 2016-
- Editorial Board Member of *GeoHazards* (MDPI, Switzerland), 2020-
- Editorial Board Member of *Buildings* (MDPI, Switzerland), 2024-
- Guest Editor, *Bull. Seism. Soc. Am.*, Special Issue on “Rotational Seismology and Engineering Applications” (Lee WHK, Celebi M, Todorovska MI, Igel H eds.), May 2009.
- Guest Editor, *Frontiers in Built Environment*, Research Topic: Urban Vibrations & their Effects upon Built Heritage: Measurements, Characterization, & Simulations, January 201/2019.
- Member of Strong Motion Programs Board of Consortium of Organizations for Strong-Motion Observation Systems (COSMOS); 2002-.
- Member of Panel on Wind and Seismic Effects of U.S.-Japan Natural Resources Program, 2005-.
- Member of the Dynamics Committee, ASCE, Engineering Mechanics Division; 1996-.
- Member of Scientific Committee of 16<sup>th</sup> World Conference on Earthquake Engineering, Chile, 2017.

### Other Professional Service

- Organizer of First International Workshop on Rotational Seismology and Engineering Applications, Menlo Park, 2007.
- Organizer of Third and Fourth U.S.-Japan (UJNR) Workshop on Soil-Structure Interaction, Menlo Park, 2004; Tsukuba, 2007.
- Founding member of International Working Group on Rotational Seismology, 2006-.
- Organized sessions at World Conferences on Earthquake Engineering, European Conferences on Earthquake Engineering, ASCE conferences and AGU meetings.
- Reviewer of proposals for NSF, USGS, Science Foundations of New Zealand, Hong Kong, Cyprus, France and Switzerland.
- Reviewer of papers for technical journals:
  - Civil Eng.: ASCE J. Eng. Mech., ASCE J. Geotech. and Geoenviron. Eng., ASCE J. of Struct. Eng., ASCE J. of Bridge Eng., Canadian J. Civil Eng., Structural Control and Health Monitoring, J. of Cultural Heritage.
  - Seismology and Geophysics: Bull. Seism. Soc. Am., J. Geophysical Research, Geofísica Internacional, Natural Hazards, GeoHazards.
  - Earthquake Eng.: Earthq. Eng. & Struct. Dyn., Earthquake Spectra, Soil Dyn. & Earthq. Eng., J. Earthquake Eng., Indian J. Earthq. Tech., Earthq. Eng. & Eng. Vib. Bull. Earthq. Eng.
  - Mechanics: J. Sound & Vib., J. Acoustic Soc. Amer., Archive of Applied Mechanics, Mechanics Research Communications, Acta Mechanica, J. of Vibration and Control, Engineering Analysis with Boundary Elements; Shock and Vibration
  - Electrical Eng.: IEEE Spectrum, IEEE Trans. Signal Processing, Sensors.
- Foreign Member of Ph.D. Dissertation Committees, Dept. of Civil Eng., National Institute of Technology Karnataka, Surathkal, Mangalore:
  - Dissertation: “Structural response variation in tall RC chimneys incorporating flexibility of soil”, SV Jisha, Ph.D. 2014.
  - Dissertation: “Effect of soil stiffness on seismic response of reinforced concrete buildings with shear walls”, H K Chinmayi, Ph.D. 2015.

- Foreign Member of Ph.D. Dissertation Committees, Dept. of Civil Eng., Indian Institute of Technology- Gandhinagar
  - Dissertation: "Characterization and Simulation of Spatially Varying Ground Motion", Gopala Krishna Rodda, Ph.D. 2019

### University Service (USC)

- Member of Provost's Committee on Academic Leadership and Advancement, 2005/2006.
- USC Ambassador, 2004-.
- Member of Mellon Mentoring Program Steering Committee, 2003/2004, 2004/2005.
- Member of Academic Senate Committee on Non-Tenure Track Faculty, 2002/2003, 2003/2004, 2004/2005, 2005/2006.
- Member of School of Engineering Faculty Council Committee on Rights and Responsibilities of Research Faculty, 2002/2003.
- Member of Academic Senate Committee in charge of producing a white paper on Non-Tenure Track Faculty, 2001/2002.
- Panellist of Research Faculty Forum, April 2002.
- Hosted visit of 2001/2002 Provost Distinguished Visitor – Prof. Francisco Jose Sánchez-Sesma of the Mexico National Autonomous University (UNAM).
- Civil Engineering Department Research Seminars Coordinator, 1998/1999 and 1999/2000.
- Prepared and graded Engineering Mathematics problems for Civil Engineering Department Screening Examination.
- Served on and chaired Qualifying Examination Committees.
- Served on Structural Curriculum Committee, Civil and Envir. Eng. Dept., 2014/2015.

### Consulting Experience

- Has served as a consultant to government agencies, oil industry, land developers, consulting firms, and law firms on strong ground motion, seismic hazard assessment, and strong motion data processing.

### Other Selected Professional Experience

- Principal Investigator of the Los Angeles and Vicinity Strong Motion Network (1997-2006).
- Archiving and data processing of accelerograms recorded in the U.S. (Los Angeles Strong Motion Network, National Strong Motion Network, Los Angeles Department of Water and Power) and abroad (former Yugoslavia, Tadjikistan, India).

### Teaching Interests

- Undergraduate courses in Mechanics, Structures, Risk Analysis and Computer Methods.
- Graduate courses in Earthquake Engineering, Dynamics of Structures, Elasticity and Wave Propagation, Engineering Mathematics, and Probabilistic Methods.
- Organize new courses in Digital Signal Processing, Estimation Theory, and Information Management for Civil Engineering students.
- Promote education in Soil-Structure Interaction.

### Teaching Experience at USC

- CE 227 Statics and Strength of Materials (instructor, USC)
- CE 408 Risk Analysis (instructor, USC, Fall 2011)
- CE 402 Computer Methods in Engineering (instructor, USC, Spring 2016)
- CE 525b Engineering Analysis (instructor, USC, many times, most recently in Spring 2011)
- CE 535a,b Earthquake Engineering (taught selected lectures, USC)
- CE 227 Statics and Strength of Materials (teaching assistant, USC)
- CE 228 Dynamics (teaching assistant, USC)
- CE 525a,b Engineering Analysis (teaching assistant, USC)
- MATH 125 Calculus I (teaching assistant, USC)

- MATH 126 Calculus II (teaching assistant, USC)
- MATH 226 Calculus III (teaching assistant, USC)

### Teaching Experience at Tianjin U.

- Advanced Structural Dynamics (instructor, Fall 2018)
- Computational methods in Geotechnical Engineering (Fall 2024)

### Teaching in International Short Courses

- Short course: 'Seismic Risk in India', December, 12-14, New Delhi, India; organized by Indian Inst. of Technology, Kanpur, Continuing Education Program. Course convener Prof. V.K. Gupta. Delivered three invited lectures; lecture notes published in course proceedings.
- Short Course on Analysis of Strong Motion Accelerograms in Geotechnical and Structural Engineering, Universidad Tecnológica de Panamá, Panama City, March 14-18, 2011. Host: Prof. Jaime Toral. Invited lectures on:
  - a. Strong motion instrumentation in buildings, Lesson 7a,b of
  - b. Fixed-base and rigid-body frequency of buildings, Lesson 8
  - c. Study of the Van Nuys building, Lesson 9
  - d. Earthquake damage detection in the ICS building, Lesson 10
  - e. System identification of tall buildings, Lesson 11
  - f. Future challenges and needs, Lesson 12
- Short Course and Workshop on Ambient Noise Imaging and Monitoring, organized by Michel Campillo, Eric Larose and Philippe Roux, Institut des Sciences de la Terre, Université Joseph Fourier, Grenoble, France, Corsica, France, April 22<sup>nd</sup>-27<sup>th</sup>, 2013. Delivered invited lecture on "Wave methods for structural system identification and health monitoring of buildings".

### Ph.D. Students Advised at USC as Chair of Ph.D. Guidance and Dissertation Committee

- Yousef Saleh Al Rjoub, Ph.D. 2007; currently Associate Professor at Jordan University of Science and Technology. Dissertation: "Soil structure interaction in poroelastic soils", May 2007.
- Mohammadtaghi Rahmani, Ph.D. Aug 2014; currently Assistant Professor, California State University, Long Beach. Dissertation: "Wave method for structural system identification and health monitoring of buildings based on layered shear beam model", August 2014.
- Mahdi Ebrahimian Dehaghani, Ph.D. Aug 2015; VSoE Doctoral Fellow (2010-2014); Outstanding Research Assistant Award in Civil and Environmental Engineering for 2013/2014; currently Junior Engineer at Kleinfelder, San Diego. Dissertation: "Structural system identification and health monitoring of buildings by the wave method based on the Timoshenko beam model", August 2015.

### Postdoctoral Fellows and Visiting Scholars Advised at USC

- A. Hayir, NATO Postdoctoral Fellow, 2000-2001; currently Professor at Istanbul Technical U.
- T.-Y. Hao, 2002-2004, Postdoc, currently Assist. Professor at California State Univ. Northridge.
- Aydin Ozmutlu, 2013-2014, Postdoc, TUBITAK Fellow; Assistant Professor of Civil Engineering, Namik Kemal University.
- Tomasz Falborski, March 1- July 31, 2014, visiting graduate student, currently Assistant Prof. at Gdansk Institute of Technology.
- Mina Sugino, Feb. 11-25, 2015, visiting graduate student, Kyoto University; currently Research Associate at Kyoto U.
- Qijian Liu, August 1-October 21, 2015, visiting scholar, Associate Prof. Hunan University.
- Jie Zhang, Sept. 2015 –2017, visiting scholar, Dalian U. of Technology, China.
- Saki Ohmura, February 4-22, 2019, visiting scholar, Kyoto U., Japan

**Graduate Students Co-advised at USC (jointly with M. Trifunac)**

- S.S. Ivanovic (Ph.D., 1998; currently Professor at U. of Monte Negro), T.-Y. Hao (Ph.D., 2002; currently Assistant Professor at California State University-Northridge), V. Gičev (Ph.D., 2005; currently Professor and Dean of Engineering, University Goce Delčev in Štip, Macedonia), R. Taborda (M.S. 2005), Hadi Meidani (2005; currently Assist. Prof. U. Illinois at Urbana-Champaign), Fabian Rojas (Fulbright scholar, 2007; currently Assist. Prof. at U. Chile,).

**Graduate Students Co-advised at IZIIS (Institute for Earthquake Engineering and Engineering Seismology, Skopje, N. Macedonia) as external committee member from USC**

- Aleksandar Zurovski, Ph.D. July 2022. “Estimation of damage in high-rise buildings based on wave propagation and the method of seismic interferometry”.

**Ph.D. and M.S. Students Advised at Tianjin U.**

- Ben Niu, M.S., Sept. 2017 – May 2020. M.S. Thesis: “A new full-scale testbed for structural health monitoring: construction and preliminary analysis”.
- Eyerusalem Abadi Girmay, M.S. Sept. 2018 - July 2020. MS Thesis: “System identification of structures based on a linearly tapered shear beam”.
- Chenghu Cao, M.S., Sept. 2018–Dec. 2020. M.S. Thesis: “Wave method for fixed-base frequency identification of buildings based on Timoshenko beam model”.
- Danling Wang, M.S., Sept. 2018 – May 2021. M.S. Thesis: “Earthquake source parameters for intermediate and small earthquakes in Yunnan Province, China, estimated from strong motion data”.
- Mingyang Chen, Sept. 2019– May 2022. MS Thesis: “Soil-pile foundation-basement-building interaction: full-scale observations and finite element model simulations”.
- Haidar Ali., M.S. Sept. 2020–November 2022. M.S. Thesis: “Functionally graded beams with exponentially graded rigidity as surrogate models of structures”.
- Min Liu, M.S., Sept 2020–May 2023. M.S. Thesis: “ Frequency-Dependent Attenuation of Earthquake Strong Ground Motion for Yunnan Province, China”.
- Yifan Zhang, M.S., Sept 2020–May 2023. M.S. Thesis: “Measurement of and soil-structure interaction effects on the dynamic properties of a typical tall residential building in Tianjin basin”.
- Faizan Nadeem, M.S., Sept. 2021-May 2024. M.S. Thesis: “Vibrations induced by underground trains: observations, modelling, and mitigation”.
- Lichiel Cruz, Ph.D., Sept. 2020-Dec. 2024. Ph.D. Thesis: “The Effects of Soft Soils on the Seismic Response of Tall Buildings on Piles”.
- I am currently advising five Ph.D. and five M.S. students.

**Computer Languages and Interpreters**

- Fortran, C++, Visual Basic, Matlab, S-Plus.

**Foreign Languages**

- English (fluent), French, Russian, Serbo-Croatian (fluent) and Macedonian (native).

**Scientific Publications****Journal Papers**

1. Trifunac MD, **Todorovska MI** (1989). Attenuation of seismic intensity in Albania and Yugoslavia, *Earthquake Engrg & Struct. Dynamics*, **18**(5):617-631. <https://doi.org/10.1002/eqe.4290180503>
2. **Todorovska MI**, Trifunac MD (1989). Antiplane earthquake waves in long structures, *J. Engrg Mech., ASCE*, **115**(12):2687-2708. [https://doi.org/10.1061/\(ASCE\)0733-9399\(1989\)115:12\(2687\)](https://doi.org/10.1061/(ASCE)0733-9399(1989)115:12(2687))

3. **Todorovska MI**, Lee VW (1989). Seismic waves in buildings with shear walls or central core, *J. Engrg Mech.*, ASCE, **115**(12):2669-2686. [https://doi.org/10.1061/\(ASCE\)0733-9399\(1989\)115:12\(2669\)](https://doi.org/10.1061/(ASCE)0733-9399(1989)115:12(2669))
4. **Todorovska MI**, Trifunac MD (1990). Propagation of earthquake waves in buildings with soft first floor, *J. Engrg Mech.*, ASCE, **116**(4):892-900. [https://doi.org/10.1061/\(ASCE\)0733-9399\(1990\)116:4\(892\)](https://doi.org/10.1061/(ASCE)0733-9399(1990)116:4(892))
5. **Todorovska MI**, Trifunac MD (1990). Note on excitation of long structures by ground waves, *J. Engrg Mech.*, ASCE, **116**(4):952-964. [https://doi.org/10.1061/\(ASCE\)0733-9399\(1990\)116:4\(952\)](https://doi.org/10.1061/(ASCE)0733-9399(1990)116:4(952))
6. **Todorovska MI**, Lee VW (1990). A note on response of shallow circular valleys to Rayleigh waves: analytical approach, *Earthquake Engrg & Engrg Vibration*, **10**(1):21-34.
7. **Todorovska MI**, Lee VW (1991). Surface motion of circular alluvial valleys of variable depth for incident plane SH waves, *Soil Dynamics & Earthquake Engrg*, **10**(4):192-200.
8. **Todorovska MI**, Lee VW (1991). A note on scattering of Rayleigh waves by shallow circular canyons: analytical approach, *Bull. Indian Soc. Earthquake Tech.*, Paper No. 306, 28 (2), 1-16.
9. **Todorovska MI**, Trifunac MD (1992). The system damping, the system frequency and the system response peak amplitudes during in-plane building-soil interaction, *Earthquake Engrg & Struct. Dynamics*, **21**(2):127-144. <https://doi.org/10.1002/eqe.4290210203>
10. **Todorovska MI** (1992). Effect of the depth of the embedment on the system response during building-soil interaction, *Soil Dynamics & Earthquake Engrg*, **11**(2):111-123.
11. **Todorovska MI** (1993). In-plane foundation-soil interaction for embedded circular foundations, *Soil Dynamics & Earthquake Engrg*, **12**(5):283-297.
12. **Todorovska MI** (1993). Effects of the wave passage and the embedment depth for in-plane building-soil interaction, *Soil Dynamics & Earthquake Engrg*, **12**(6):343-355.
13. **Todorovska MI**, Trifunac MD (1992). Effects of the base input rocking on the relative response of long buildings on embedded foundations, *European Earthquake Engrg*, Vol. VI-n.1, 36-46.
14. Jordanovski LR, **Todorovska MI**, Trifunac MD (1992). The total loss in a building exposed to earthquake hazard, Part I: the model, *European Earthquake Engrg*, Vol. VI-n.3, 14-25.
15. Jordanovski LR, **Todorovska MI**, Trifunac MD (1992). The total loss in a building exposed to earthquake hazard, Part II: a hypothetical example, *European Earthquake Engrg*, Vol. VI-n.3, 26-32.
16. **Todorovska MI** (1994). Comparison of response spectrum amplitudes from earthquakes with lognormally and exponentially distributed return period, *Soil Dynamics & Earthquake Engrg*, **13**(2):97-116.
17. **Todorovska MI** (1994). Order statistics of functionals of strong ground motion for a class of renewal processes, *Soil Dynamics & Earthquake Engrg*, **13**(6):399-405.
18. **Todorovska MI** (1995). A note on distribution of amplitudes of peaks in structural response including uncertainties of the exciting ground motion and of the structural model, *Soil Dynamics & Earthquake Engrg*, **14**(3):211-217.
19. Trifunac MD, **Todorovska MI**, Ivanovic SS (1994). A note on distribution of uncorrected peak ground accelerations during the Northridge, California, earthquake of 17 January 1994, *Soil Dynamics & Earthquake Engrg*, **13**(3):187-196.
20. Novikova EI, **Todorovska MI**, Trifunac MD (1994). Frequency dependent duration of strong earthquake ground motion on the territory of former Yugoslavia, Part I: magnitude models, *European Earthquake Engrg*, Vol. VIII-n.3, 11-25.
21. Novikova EI, **Todorovska MI**, Trifunac MD (1994). Frequency dependent duration of strong earthquake ground motion on the territory of former Yugoslavia, Part I: local intensity models, *European Earthquake Engrg*, Vol. VIII-n.3, 26-37.

22. **Todorovska MI**, Lee VW (1995). A note on sensitivity of uniform probability spectra on modeling the fault geometry in areas with a shallow seismogenic zone, *European Earthquake Engrg*, Vol. IX-n.2, 14-22.
23. Scientists of the U.S. Geological Survey and the Southern California Earthquake Center (1994). (Direct contribution made by: L. Jones, K. Aki, D. Boore, M. Celebi, A. Donnelan, J. Hall R. Harris, E. Hauksson, T. Heaton, S. Hough, K. Hudnut, K. Hutton, M. Johnston, W. Joyner, H. Kanamori, G. Marshall, A. Michael, J. Mori, M. Murray, D. Ponti, P. Reasenber, D. Schwartz, L. Seeber, A. Shakal, R. Simpson, H. Thio, J. Tinsley, **M. Todorovska**, M. Trifunac, D. Wald, M.L. Zobak.). The magnitude 6.7 Northridge, California, earthquake of 17 January 1994, *Science*, **226**:389-397.
24. Trifunac MD, **Todorovska MI** (1996). Nonlinear soil response - 1994 Northridge, California, earthquake, *J. Geotech. Engrg*, ASCE, **122**(9):725-735. [https://doi.org/10.1061/\(ASCE\)0733-9410\(1996\)122:9\(725\)](https://doi.org/10.1061/(ASCE)0733-9410(1996)122:9(725))
25. **Todorovska MI** (1996). Liquefaction hazard assessment via seismic wave energy and SPT values, *European Earthquake Engrg*, Vol. X-n.2, 24-37.
26. **Todorovska MI**, Trifunac MD (1996). Seismic hazard model for peak strains in soils during strong earthquake shaking, *Earthquake Engrg & Engrg Vibration*, Vol. 16 supplement, 1-12.
27. Trifunac MD, **Todorovska MI**, Ivanovic SS (1996). Peak velocities and peak surface strains during the Northridge, California, earthquake of 17 January 1994, *Soil Dynamics & Earthquake Engrg*, **15**(5):301-310.
28. **Todorovska MI**, Trifunac MD (1996). Hazard mapping of normalized peak strain in soil during earthquakes: microzonation of a metropolitan area, *Soil Dynamics & Earthquake Engrg*, **15**(5):321-329.
29. Trifunac MD, **Todorovska MI** (1997). Response spectra for differential motion of columns, *Earthquake Engrg & Struct. Dynamics*, **26**(2):251-268.
30. Trifunac MD, **Todorovska MI** (1997). Northridge, California, earthquake of 1994: density of red-tagged buildings versus peak horizontal velocity and intensity of shaking, *Soil Dynamics & Earthquake Engrg*, **16**(3):209-222.
31. Trifunac MD, **Todorovska MI** (1997). Northridge, California, earthquake of 1994: density of pipe breaks and surface strains, *Soil Dynamics & Earthquake Engrg*, **16**(3):193-207.
32. **Todorovska MI**, Trifunac MD (1997). Distribution of pseudo spectral velocity during the Northridge, California, earthquake of 17 January 1994, *Soil Dynamics & Earthquake Engrg*, **16**(3):173-192.
33. **Todorovska MI**, Trifunac MD (1997). Amplitudes, polarity and time of peaks of strong ground motion during the 1994 Northridge, California, earthquake, *Soil Dynamics & Earthquake Engrg*, **16**(4):235-258.
34. Trifunac MD, **Todorovska MI** (1997). Closure by the authors of discussion of 'Nonlinear soil response - 1994 Northridge, California, earthquake' (September 1996, Vol. 122, No. 9 by M.D. Trifunac and M.I. Todorovska, Paper 9798), *J. Geotech. Eng. ASCE*, **123**(10):989-990. [https://doi.org/10.1061/\(ASCE\)1090-0241\(1997\)123:10\(989\)](https://doi.org/10.1061/(ASCE)1090-0241(1997)123:10(989))
35. Trifunac MD, **Todorovska MI** (1998). Nonlinear soil response as a natural passive isolation mechanism - the 1994 Northridge, California, earthquake, *Soil Dynamics & Earthquake Engrg*, **17**(1):41-51.
36. Trifunac MD, **Todorovska MI** (1998). The Northridge, California, earthquake of 1994: fire ignition by strong shaking, *Soil Dynamics & Earthquake Engrg*, **17**(3):165-175.
37. Trifunac MD, **Todorovska MI**, Lee VW (1998). The Rinaldi strong motion accelerogram of the Northridge, California earthquake of 17 January 1994, *Earthquake Spectra*, **14**(1):225-239.
38. Trifunac MD, **Todorovska MI** (1998). Damage distribution during the 1994 Northridge, California, earthquake in relation to generalized categories of surficial geology, *Soil Dynamics & Earthquake Engrg*, **17**(4):238-252.
39. **Todorovska MI** (1998). Cross-axis sensitivity of accelerographs with pendulum like transducers: mathematical model and the inverse problem, *Earthquake Engrg & Struct. Dynamics*, **27**:1031-1051.



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65. Rahmani M, **Todorovska MI**, Grabinski JR (2018). Wave method for structural health monitoring: variation of vertical wave velocities in 16 buildings as function of structural type and building material, *Proc. 7<sup>th</sup> World Conf. on Structural Control and Monitoring*, Qingdao, China, July 22-25, 2018, Paper No. 590, pp. 2593-2604.
66. Zaccarelli L, Ebrahimian M, **Todorovska M**, R.M. Azzara RM, Morelli A (2019). Elastic properties time variations of a medieval masonry structure: the Garisenda tower in Bologna, *Geophysical Research Abstracts*, Vol 21, p1-1, *Proc. EGU2019-15286*, 2019.
67. **Todorovska MI**, Ba Z, Ozmutlu A, Gao Z (2019). Excavations, hills and inclusions as seismic metamaterials: can they be used as wave barriers protecting structures from seismic and anthropogenic sources of vibrations? *Seismological Research Letters* Volume 90, Number 2B, p.1020, March/April 2019. *Proc. Seism. Soc. America 2019 Annual Meeting (SSA2019)*, Seattle, Washington, USA, 23-26 April 2019. Abstract.

68. **Todorovska MI**, Ebrahimian M, Rahmani M (2019). Wave imaging of structures and its use for monitoring the structural health: recent developments and outstanding challenges, *Proc. 2nd SEG Rock Physics Workshop: Challenges in Deep and Unconventional Oil/Gas Exploration*, 25–27 October 2019 in Qingdao, China, organized by *Society of Exploration Geophysics* (SEG), Tulsa, Oklahoma, US. Abstract. Keynote invited lecture, Abstract.
69. **Todorovska MI**, Niu B, Lin G, Cao C, Wang D, Cui J, Wang F, Zhou Z, Li X, Trifunac MD, Liang J (2020). The Tongde Plaza Yue Center full-scale seismic observation site in Kunming, Yunnan Province, China, *Proc. 17WCEE*, Sendai, Japan, 13-18 Sept. 2020. Paper no. 1e0013 (12 pages).
70. Rahmani M, Grabinski GR, **Todorovska MI**, Ebrahimian M (2020). Earthquake damage detection and localization in a full-scale slice of a 7-story RC shear wall building, *Proc. 17WCEE*, Sendai, Japan, 13-18 Sept. 2020. Paper no. 6b0016 (12 pages).
71. Aihemaiti A, **Todorovska MI**, Trifunac M (2023). Tongde Plaza Yue Center (TPYC) Full-scale testbed site: fixed-base digital twin and its validation using microtremors, Chapter 57 in *Experimental Vibration Analysis for Civil Engineering Structures*, M.P. Limongelli et al. (Eds.), Volume 433 of *Lecture Notes in Civil Engineering* series, pp. 560-570. Springer Nature, Switzerland. (*Proc. EVACES 2023*, Milan, Italy, Aug. 30 – Sept. 1, 2023. (11 pages). [https://doi.org/10.1007/978-3-031-39117-0\\_57](https://doi.org/10.1007/978-3-031-39117-0_57)).
72. **Todorovska MI**, Cruz L, Trifunac M, Aihemaiti A, Lin G, Cui J (2024). Response of tall buildings to translation and rotation at their base with examples from an instrumented 50-story skyscraper, *Proc. 18th World Conf. Earthq. Eng.*, Rome, Italy, 30 June-5 July 2024 (session keynote lecture) (12 pages).
73. Aihemaiti A, **Todorovska MI**, Trifunac MD, Cruz L, Lin G, Cui J (2024). The effects of weather on the vibrational frequencies of an instrumented 50-story skyscraper, *Proc. 18th World Conf. Earthq. Eng.*, Rome, Italy, 30 June-5 July 2024 (12 pages).
74. Rahmani M, Barjani A, **Todorovska MI**, (2024). Variability in wave velocity estimation for structural health monitoring: the case of a tall steel frame building, *Proc. 18th World Conf. Earthq. Eng.*, Rome, Italy, 30 June-5 July 2024 (12 pages).
75. **Todorovska MI**, Girmay EA, Ali H, Cruz L, Rahmani M, Trifunac M (2024). Recent developments in surrogate and digital twin modeling of tall buildings, Abstract EP241196, *Engineering Mechanics Institute Conference and Probabilistic Mechanics & Reliability Conference* (EMI/PMC 2024), May 28-31, 2024, Chicago, IL. Abstract.
76. Cruz L, Bazeghi Kisomia H, **Todorovska MI**, Chen M, M.D. Trifunac MD (2024). Soil-piles-basement-structure digital twin of a skyscraper excited by earthquake waves. *6th Eurasian Conference on OpenSees*, 24th–25th July 2024, Beijing, China. Abstract.
77. **Todorovska MI**, Cruz L, Chen M, Trifunac MD (2024). Soil-piles-basement-tower interaction study of a 50-story instrumented skyscraper in a seismic region. *1<sup>st</sup> International Conference on Safety and Resilience of Infrastructure*, August 12-15, Tianjin, China. Abstract.
78. Aihemaiti A, **Todorovska MI**, Trifunac MD (2024). Data driven models for the variation of the vibrational frequencies of an instrumented 50-story skyscraper during small amplitude response. *1<sup>st</sup> International Conference on Safety and Resilience of Infrastructure*, August 12-15, Tianjin, China. Abstract.

### Edited Journal Special Issues and Conference/Workshop Proceedings

1. Çelebi M, **Todorovska MI**, Okawa I, Iiba M (Eds.) (2004). CD ROM Proc. Third UJNR Workshop on Soil-Structure Interaction, March 29-30, 2004, Menlo Park, California. [[http://www.usc.edu/dept/civil\\_eng/Earthquake\\_eng/Proc/](http://www.usc.edu/dept/civil_eng/Earthquake_eng/Proc/)]
2. Okawa I, Iiba M, Çelebi M, **Todorovska MI**, (Eds.) (2007). CD ROM Proc. Fourth UJNR Workshop on Soil-Structure Interaction, March 29-31, 2007, Tsukuba, Japan (in press).

3. Lee WHK, Çelebi M, **Todorovska MI**, Diggles MF (Eds) (2007). Rotational Seismology and Engineering Applications: Online Proceedings for the First International Workshop, Menlo Park, California, U.S.A.—September 18 to 19, 2007, U.S. Geological Survey, Open-File Report 2007-1144. [<http://pubs.usgs.gov/of/2007/1144>]
4. Lee WHK, Çelebi M, **Todorovska MI**, Igel H, Guest Editors (May 2009). Bulletin of the Seismological Society of America, Special Issue on Rotational Seismology and Engineering Applications, 99(2B).

#### Conference Presentations (since 2006):

1. **Todorovska MI**, Al Rjoub Y (2006). Effects of Rainfall on Soil-Structure System Frequency: Examples based on Poroelasticity and a Comparison with Full-Scale Measurements, *Proc. Centennial Meeting of the Seismological Society of America* (commemorating the 100th anniversary of the 1906 earthquake), April 18-22, 2006, San Francisco California. Abstract Number: SSA-000049. (poster). **Todorovska MI**, Trifunac MD (2006). A note on probabilistic assessment of fault displacement hazard, *Proc. 8<sup>th</sup> National Conference on Earthquake Engineering* (commemorating the 100th anniversary of the 1906 earthquake), April 18-22, 2006, San Francisco California, Paper Number: 8NCEE-001793. (poster)
3. **Todorovska MI**, Trifunac MD (2006). Earthquake damage detection in the former Imperial County Services Building, *Proc. First European Conference on Earthquake Engineering and Seismology* (a joint event of the 13<sup>th</sup> ECEE & 30<sup>th</sup> General Assembly of the ESC), Geneva, Switzerland, 3-8 September 2006, Abstract No. 1569. (poster)
4. **Todorovska MI**, Trifunac MD, Hao TY (2006). Variations of apparent building frequencies - lessons from full-scale earthquake observations, *Proc. First European Conference on Earthquake Engineering and Seismology* (a joint event of the 13<sup>th</sup> ECEE & 30<sup>th</sup> General Assembly of the ESC), Geneva, Switzerland, 3-8 September 2006, Paper No. 1547, pp. 9. (oral and poster, invited)
5. **Todorovska MI** (2006). Rotational ground motions radiated by vibrating structures, *2006 AGU Fall Meeting*, San Francisco, California, 11-15 December 2006, Abstract No. AN: S22A-07. (oral)
6. **Todorovska MI**, Al Rjoub Y (2007). Soil-structure Interaction in a proelastic medium and short-term building frequency shift following heavy rainfall – the case with seepage force, *Proc. 4<sup>th</sup> UJNR Workshop on Soil-Structure Interaction*, March 29-31, 2007, Tsukuba, Japan, (oral, invited)
7. **Todorovska MI**, Trifunac MD (2007). Instrument Correction for 6DOF Seismic Sensors, *First Int. Workshop on Rotational Seismology and Engineering Applications*, Menlo Park, 18-19 Sept. 2007. (oral, invited)
8. **Todorovska MI** (2008). Separation of the effects of soil-structure interaction in frequency estimation of buildings from earthquake records and implications for structural health monitoring, *NATO Advanced Research Workshop on Coupled Site and Soil-structure Interaction Effects with Application to Seismic Risk Mitigation*, Borovets, Bulgaria, 30 Aug. 2008-3 Sept. 2008. (oral, invited).
9. **Todorovska MI** (2008). Identification of fixed-base and rigid body frequencies of vibration of soil-structure systems from recorded response with minimum instrumentation, *Proc. 14<sup>th</sup> World Conference on Earthquake Engineering, October 12-17, 2008, Beijing, China*, Paper 11-0173, pp. 10. (oral)
10. **Todorovska MI**, Igel H, Trifunac MD, Lee WHK (2008). Rotational Earthquake Motions - International Working Group and its Activities, *Proc. 14<sup>th</sup> World Conference on Earthquake Engineering, October 12-17, 2008, Beijing, China*, Paper 03-02-0031, pp. 10. (oral)
11. Trifunac MD, **Todorovska MI**, Manić MI, Bulajić BĐ (2008). Threshold changes in building frequencies of vibration associated with structural damage - study of full-scale observations in the Borik-2 building in former Yugoslavia, *Proc. 14<sup>th</sup> World Conference on Earthquake Engineering, October 12-17, 2008, Beijing, China*, Paper S05-03-015, pp. 10. (oral)
12. **Todorovska MI**, Trifunac MD (2008). Earthquake damage detection in structures and early warning, *Proc. 14<sup>th</sup> World Conference on Earthquake Engineering, October 12-17, 2008, Beijing, China*, Paper S05-03-010, pp. 10. (oral)

13. Trifunac MD **Todorovska MI** (2008). Origin of the response spectrum method, *Proc. 14<sup>th</sup> World Conference on Earthquake Engineering, October 12-17, 2008, Beijing, China*, Paper 11-0173, pp. 10. (oral).
14. **Todorovska MI** (2009). Shaking hazard compatible methodology for probabilistic assessment of fault displacement hazard, *Surface Fault Displacement Hazard Workshop*, PEER, Berkeley, May20-21, 2009. (oral).
15. **Todorovska MI**, Al Rjoub Y. (2009). Soil-structure interaction and Biot's theory of wave propagation in poroelastic media as possible explanation for observed changes of apparent frequencies of vibration of a building with heavy rainfall, *Proc. The Fourth Biot Conference on Poromechanics*, Columbia University, New York, June 8-10, 2009, pp. 6. (oral)
16. **Todorovska MI** (2009). Earthquake damage detection in buildings and early warning based on wave travel times, *Proceedings of 2009 NSF Engineering Research and Innovation Conference*, Honolulu, Hawaii, June 22-25, 2009, Grant # CMMI-0800399. (poster)
17. **Todorovska MI**, Rahmani MT (2010). Impulse response analysis of layered building models and lessons learned for structural health monitoring, *Proc. EMI 2010 Engineering Mechanics Conference*, USC, Los Angeles, Aug 8-11, 2010. (oral). M. Rahmani presenter.
18. **Todorovska MI**, Rahmani MT (2012). Observed torsional waves in buildings during earthquakes and their use for structural health monitoring, *SSA 2012, Seismological Society of America Annual Meeting*, San Diego, CA, 17-19 April 2012, oral, invited.
19. **Todorovska MI**, Rahmani M (2012). Recent advances in wave travel-time based methodology for structural health monitoring and early earthquake damage detection in buildings, *The 15<sup>th</sup> World Conference on Earthquake Engineering (15WCEE)*, Sept. 24-28, 2012, Lisbon, Portugal, oral.
20. **Todorovska MI**, Trifunac MD, Lee VW, Orbovic N (2012). Physical-empirical model for generation of multi-component synthetic ground motion time histories at closely spaced distances, *The 15<sup>th</sup> World Conference on Earthquake Engineering (15WCEE)*, Sept. 24-28, 2012, Lisbon, Portugal, oral.
21. Trifunac MD, **Todorovska MI** (2012). Earthquake design spectra for performance-based design, *The 15<sup>th</sup> World Conference on Earthquake Engineering (15WCEE)*, Sept. 24-28, 2012, Lisbon, Portugal, oral.
22. Gičev V, Trifunac MD, **Todorovska MI** (2012). Reduction of SH pulse by nonlinear soil strains and soil, *The 15<sup>th</sup> World Conference on Earthquake Engineering (15WCEE)*, Sept. 24-28, 2012, Lisbon, Portugal, e-poster.
23. **Todorovska MI**, Trifunac MD, Lee VW (2013). Synthetic earthquake ground motions for the design of long structures, *Sixth China-Japan-US Trilateral Symposium on Lifeline Earthquake Engineering*, Chengdu, May 28 – June 1, 2013.
79. Ebrahimian M, Rahmani M, **Todorovska MI** (2014). Wave method for system identification and health monitoring of buildings – extension to fitting Timoshenko beam model, *Proceedings of the 10<sup>th</sup> National Conference in Earthquake Engineering*, Anchorage, Alaska, July 21-25, 2014, Earthquake Engineering Research Institute, Oakland, CA. pp. 10. Poster presented by M. Ebrahimian.
80. Ebrahimian M, **Todorovska MI** (2014). Structural system identification of buildings by a wave method based on a layered Timoshenko beam model, *Proceedings of SPIE Smart Structures and Materials + Nondestructive Evaluation and Health Monitoring Conference*, 9–13 March 2014, San Diego, CA, pp. 10. Oral, presented by M. Ebrahimian.
81. **Todorovska MI**, Ozmutlu A, Ebrahimian M, (2015). Wave propagation in buildings as periodic structures: Timoshenko beam with slabs model and its application to structural system identification and health monitoring, *Seismological Society of America Annual Meeting*, Pasadena, CA, 21-25 April 2015, oral, presented by M. Todorovska.
82. Rahmani M, Ebrahimian M, **Todorovska MI** (2015). Time-wave velocity analysis for early earthquake damage detection in buildings: application to a damaged full-scale RC Building, *Seismological Society of America Annual Meeting*, Pasadena, CA, 21-25 April 2015, poster, presented by M. Todorovska.



83. Ebrahimian M, **Todorovska MI** (2015). Is ambient excitation as effective as the larger amplitude earthquake excitation for detecting earthquake damage in full-scale structures? Some results based on shake table tests of a full-scale 7-story building slice, *Seismological Society of America Annual Meeting*, Pasadena, CA, 21-25 April 2015, poster, presented by M. Ebrahimian.
84. Zaccarelli L, **Todorovska M**, Ebrahimian M, Morelli A, Cavaliere A, Azzara R (2015). Monitoring two medieval towers through ambient seismic noise deconvolutions, 26<sup>th</sup> IUGG General Assembly 2015, Prague, Czech Republic, June 22-July 2, 2015. *International Union of Geophysics and Geodesy*, Poster, presented by L. Zaccarelli.
85. **Todorovska MI**, Ding H, Trifunac MD (2016). Coherency of synthetic earthquake ground motion for the design of long structures: effect of site conditions, *Proceedings of the 7th China-Japan-United States Trilateral Symposium on Lifeline Earthquake Engineering*, Shanghai, China, June 1-4, 2016. Oral, presented by M. M. Todorovska.
86. Rahmani M, Hao T-Y, **Todorovska MI**, Boroschek R (2017). Wave velocities in Torre Central building of University of Chile and their changes caused by M8.8 Maule Earthquake of 2010, *16th World Conf. on Earthquake Eng.*, Santiago, Chile, Jan. 9-13, 2017. Oral, presented by M. Todorovska.
87. **Todorovska MI** (2017). Structural Health Monitoring as a Tool to Facilitate Early Post Earthquake Decision Making. *7th High-level (academician) Forum in the field of Hydraulic Engineering and the 2nd International Symposium on Hydraulic Engineering Simulation and Safety*, September 20 to 22, 2017, Tianjin, China. Invited talk.
88. **Todorovska MI**, Ebrahimian M, Rahmani M (2017). Wave Method for Structural System Identification and Health Monitoring: Application to a Special Building, *Eighth European Workshop on the Seismic Behaviour of Irregular and Complex Structures*, 19-20 October 2017, Bucharest, Romania. Keynote lecture.
89. **Todorovska MI**, Ozmutlu A., Ebrahimian M (2018). Wave propagation in high-rise buildings viewed as metamaterials, *EGU General Assembly 2018*, Vienna, Austria, April 8-13, 2018. Oral, Invited, presented by M. Todorovska.
90. **Todorovska MI**, Ebrahimian M, Rahmani M (2018). Wave Method for Structural Health Monitoring: Review of Recent Developments, *11<sup>th</sup> National Conference on Earthquake Engineering*, Los Angeles, California, June 25-29, 2018, Oral, Invited, presented by M. Todorovska.
91. **Todorovska MI**, Ba Z, Ozmutlu A, Gao Z (2019). Excavations, hills and inclusions as seismic metamaterials: can they be used as wave barriers protecting structures from seismic and anthropogenic sources of vibrations? *Seism. Soc. America 2019 Annual Meeting (SSA2019)*, Seattle, Washington, USA, 23-26 April 2019. Technical Session: Metamaterials, Resonances and Seismic Wave Mitigation, an Emerging Trend in Seismology, Oral, invited, to be presented by M. Todorovska.
92. **Todorovska M**, Niu B, Lin G, Cao C, Wang D, Cui J, Wang F, Zhou Z, Li X, Trifunac MD, Liang J (2020). The Tongde Plaza Yue Center full-scale seismic observation site in Kunming, Yunnan Province, China, Proc. 17WCEE, Sendai, Japan, 13-18 Sept. 2020. Paper no. 1e0013. Via Zoom.
93. Aiheamaiti A, Todorovska MI, Trifunac M (2023). Tongde Plaza Yue Center (TPYC) Full-Scale Testbed Site: Preliminary (Fixed-Base) Digital Twin and its Calibration using Microtremors, 10th International Conference on Experimental Vibration Analysis for Civil Engineering Structures, Milan, Italy, Aug. 30 – Sept. 1, 2023.
94. Todorovska MI, Girmay EA, Ali H, Cruz L, Rahmani M, Trifunac M (2024). Recent developments in surrogate and digital twin modeling of tall buildings, Abstract EP241196, Engineering Mechanics Institute Conference and Probabilistic Mechanics & Reliability Conference (EMI/PMC 2024), May 28-31, 2024, Chicago, IL. Session Complex dynamics and vibration control of infrastructure exposed to single/multiple hazards.

95. **Todorovska MI**, Cruz L, Trifunac M, Aihemaiti A, Lin G, Cui J (2024). Response of tall buildings to translation and rotation at their base with examples from an instrumented 50-story skyscraper, *Proc. 18th World Conf. Earthq. Eng.*, Rome, Italy, 30 June-5 July 2024 (session keynote lecture).
96. Aihemaiti A, **Todorovska MI**, Trifunac MD, Cruz L, Lin G, Cui J (2024). The effects of weather on the vibrational frequencies of an instrumented 50-story skyscraper, *Proc. 18th World Conf. Earthq. Eng.*, Rome, Italy, 30 June-5 July 2024 (12 pages).
97. Rahmani M, Barjani A, **Todorovska MI**, (2024). Variability in wave velocity estimation for structural health monitoring: the case of a tall steel frame building, *Proc. 18th World Conf. Earthq. Eng.*, Rome, Italy, 30 June-5 July 2024 (12 pages). Presented by M. Rahmani.
98. Cruz L, Bazeghi Kisomia H, **Todorovska MI**, Chen M, M.D. Trifunac MD (2024). Soil-piles-basement-structure digital twin of a skyscraper excited by earthquake waves. *6th Eurasian Conference on OpenSees*, 24th–25th July 2024, Beijing, China. Abstract. Presented by L. Cruz.
99. **Todorovska MI**, Cruz L, Chen M, Trifunac MD (2024). Soil-piles-basement-tower interaction study of a 50-story instrumented skyscraper in a seismic region. *1<sup>st</sup> International Conference on Safety and Resilience of Infrastructure*, August 12-15, Tianjin, China. Abstract.
100. Aihemaiti A, **Todorovska MI**, Trifunac MD (2024). Data driven models for the variation of the vibrational frequencies of an instrumented 50-story skyscraper during small amplitude response. *1<sup>st</sup> International Conference on Safety and Resilience of Infrastructure*, August 12-15, Tianjin, China. Abstract. Presented by A. Ahmat.

#### Invited Seminar Presentations and Lectures (2006-):

- Overview of the research by USC Strong Motion Group, Seminar, Keston Institute for Public Finance and Infrastructure Policy, University of Southern California, August 17, 2006.
- Earthquake damage detection in two buildings – comparative analysis of three structural health monitoring methods including a new wave method, Civil Engineering Seminar, University of Southern California, February 28, 2007.
- Earthquake damage detection in two buildings – comparative analysis of three structural health monitoring methods, Seminar, Department of System Design Engineering, Keio University, Japan, April 2, 2007.
- Earthquake damage detection in two buildings – comparative analysis of three structural health monitoring methods, International Seminar on Structural System Identification, Earthquake Disaster Research Laboratory, Disaster Control Research Center, Tohoku University, March 26, 2007.
- Earthquake damage detection in two buildings – comparative analysis of three structural health monitoring methods, Seminar, Rudarsko-Geoloski Fakultet, Stip, Makedonija, May 14, 2007.
- Specification of the seismic effects – from theory to applications, Lecture delivered as part of Short Course on Seismic Hazard Assessment and Mapping – Methodology and Examples, organized by Association of Civil Engineers of Serbia and magazine Izgradnja, Belgrade, Serbia, May 21, 2007.
- Structural models for rational design, structural health monitoring and seismic risk and loss assessment”, Earthquake Hazards Seminar, U.S. Geological Survey, Menlo Park, California, January 17, 2008. [ [mms://video.wr.usgs.gov/ehz/2008/20080117.wmv](https://video.wr.usgs.gov/ehz/2008/20080117.wmv) ]  
<http://earthquake.usgs.gov/regional/nca/seminars/?year=2008>. Probabilistic description of ground motion for seismic design of highway bridges, METRANS Seminar, U. of Southern California, March 26, 2008.
- The role of soil-structure interaction in structural system identification and health monitoring. Lecture delivered as part of short course on Soil-Structure Interaction, organized by Association of Civil Engineers of Serbia and magazine Izgradnja, Belgrade, Serbia, June 23, 2008.

- The role of soil-structure interaction in structural system identification and health monitoring. Lecture delivered at Civil Engineering Department of Univ. St. Cyril and Methodius, Skopje, Macedonia, June 17, 2008.
- Intermediate scale wave method for structural health monitoring and its application to earthquake response data recorded in full-scale buildings. Seminar, Institute of Engineering Mechanics, Chinese Earthquake Administration, Harbin, China, October 22, 2008.
- Intermediate scale wave method for structural health monitoring and its application to earthquake response data recorded in full-scale buildings. Seminar, Civil Engineering Department, Tianjin Univ., Tianjin, China, October 23, 2008.
- Identification of buildings using a wave method. Seminar, Institute of Engineering, Universidad Nacional Autonoma de Mexico (UNAM), March 10, 2011.
- Short Course on Analysis of Strong Motion Accelerograms in Geotechnical and Structural Engineering, Universidad Tecnológica de Panamá, Panama City, March 14-18, 2011.
  - a. Strong motion instrumentation in buildings, Lesson 7a,b of
  - b. Fixed-base and rigid-body frequency of buildings, Lesson 8
  - c. Study of the Van Nuys building, Lesson 9
  - d. Earthquake damage detection in the ICS building, Lesson 10
  - e. System identification of tall buildings, Lesson 11
  - f. Future challenges and needs, Lesson 12
- Structural system identification and earthquake damage detection in buildings based on a wave propagation model, 5th Scientific Research Gathering “Experiences and Learning from the Earthquake that Struck Kraljevo on 3rd of November 2010” June 2-3, 2011, Kraljevo, Srbija.
- Artificial earthquake ground motions on an array for the design of long structures, VI Scientific Research Gathering “Design of Lifeline Systems in Seismic Regions”, organized by Izgradnja, June 15, 2012, Belgrade, Srbija.
- Artificial earthquake ground motions on an array for the design of long structures, lecture at Institute for Rebuilding of Banja Luka, 16 Juli 2012, Banja Luka, Republic of Srpska.
- Recent advances in wave travel time based methodology for structural health monitoring and early earthquake damage detection in buildings, seminar, Universidade do Porto, Faculdade de Engenharia, Portugal, October 1, 2012.
- Structural health monitoring and damage detection based on wave propagation methodology, seminar, Laboratório Nacional de Engenharia Civil (LNEC), Lisboa, Portugal, October 3, 2012.
- Structural health monitoring and damage detection based on wave propagation methodology, seminar, Kinematics Inc., Pasadena, CA, April 16, 2013.
- Wave methods for structural system identification and health monitoring of buildings, invited lecture presented at Ambient Noise Imaging and Monitoring, short course and workshop organized by Michel Campillo, Eric Larose and Philippe Roux, Institut des Sciences de la Terre, Université Joseph Fourier, Grenoble, France, Cargese, Corsica, France, April 22<sup>nd</sup>-27<sup>th</sup>, 2013.
- Wave method for structural health monitoring and early earthquake damage detection in buildings, lecture, Hunan University, Changsha, China, May 27, 2013.
- Probabilistic Flood Hazard and Risk Analysis for the Balkan Countries - Conceptual Framework, invited lecture presented at IX Scientific Meeting, dedicated to Causes and Consequences of the Catastrophic Floods of 2014 in Serbia – Rainfall, Erosion, Floods, Flush Floods, Slides and Earthquakes, organized by Izgradnja, Belgrade, 25 June, 2015.
- Wave Imaging of Buildings for structural health monitoring, Rapid Fire Conference @ MIT, honoring Prof. Eduardo Kausel, by invitation only, Cambridge, Massachusetts, Oct. 26, 2015.
- Wave Imaging of Buildings for structural health monitoring, Guest Professor Inaugural Lecture, Tianjin U., China, May 22, 2016.

- Wave Imaging of Buildings for structural health monitoring, Lecture, Nanjing Tech U., Nanjing, China, May 31, 2016.
- Wave Imaging of Buildings for structural health monitoring, Lecture, U. of Guilan, Rasht, Iran, July 24, 2016.
- Synthetic earthquake ground motion for the design of long structures, Lecture, U. of Guilan, Rasht, Iran, July 25, 2016.
- Coherency of synthetic earthquake ground motion at small separation distances: effects of site conditions, Lecture, U. of Guilan, Rasht, Iran, July 25, 2016.
- Wave method for structural system identification and health monitoring, Lecture, Invited, Yunnan Earthquake Agency, Kunming, Yunnan, China, January 9, 2018.
- Wave method for structural system identification and health monitoring – recent developments, Lecture, Invited; Institute of Earthquake Engineering and Engineering Seismology (IZIIS), Skopje, Republic of Macedonia, <http://www.iziis.edu.mk/>, February 14, 2018.
- Wave method for structural system identification and health monitoring - review of recent developments. Lecture, Invited; Instituto Nazionale di Geofisica e Vulcanologia (INGV), Bologna, Italy, <http://www.ingv.it/>; April 16, 2018.
- Wave method for structural system identification and health monitoring - review of recent developments. Lecture, Invited; BRGM – The French Geological Survey; Orléans, France; <http://www.brgm.eu/>, April 17, 2018.
- Wave imaging of structures and its use for monitoring the structural health: recent developments and outstanding challenges, Keynote invited lecture presented at 2<sup>nd</sup> *SEG Rock Physics Workshop: Challenges in Deep and Unconventional Oil/Gas Exploration*, 25–27 October 2019 | Qingdao, China, under the auspices of Society of Exploration Geophysics, Tulsa, Oklahoma, US. [https://seg.org/Portals/0/SEG/Events/2019\\_2nd\\_Rock\\_Geophysics/Rock\\_Physics\\_Official\\_Program.pdf](https://seg.org/Portals/0/SEG/Events/2019_2nd_Rock_Geophysics/Rock_Physics_Official_Program.pdf)
- Structural Health Monitoring of Full-Scale Buildings: Recent Developments, Lecture, I.I.T. Hyderabad, India, 3 Feb. 2021, host: Prof. Surendra Nadh Somala, via teleconferencing.
- Full-scale experiments in a modern tall building, Lecture, Institute of Engineering, National Autonomous University of Mexico (UNAM), 15 November 2023, in person. Visit hosted by UNAM. <https://www.youtube.com/watch?v=6ycigD7bARQ>
- Full-scale experiments in a modern tall building, Seminar, Engineering Mechanics Institute (ASCE), Dynamics Seminar Series, online, February 21, 2024

### Organization of Workshops and Conference Sessions (past few years only):

1. Celebi M, **Todorovska MI**, Okawa I, Iiba M. (organizers), *Third UJNR Workshop on Soil-Structure Interaction*, March 29-30, 2004, Menlo Park, California. Principal Investigator of NSF grant to organize this meeting. [[http://www.usc.edu/dept/civil\\_eng/Earthquake\\_eng/Proc/](http://www.usc.edu/dept/civil_eng/Earthquake_eng/Proc/)]
2. **Todorovska MI**, P. Lestuzzi (session chairs), Debate session: STS10: By how much does the natural frequency of structures decrease during seismic response? *First European Conference on Earthquake Engineering and Seismology*, Geneva, Switzerland, 3-8 September 2006.
3. Lee WHK, Igel H, **Todorovska MI**, Evans JR (session chairs), Special Session S22A: Rotational Motions in Seismology, *2006 AGU Fall Meeting*, San Francisco, California, 11-15 December, 2006. [<http://pubs.usgs.gov/of/2007/1263/>]
4. Okawa I, Iiba M, Celebi M, **Todorovska MI**. *Fourth UJNR Workshop on Soil-Structure Interaction*, March 29-31, 2007, Tsukuba, Japan. Principal Investigator NSF travel grant for US team to attend this meeting.
5. Lee WHK, Celebi M, **Todorovska MI** (organizers), First International Workshop on Rotational

Seismology and Engineering Applications, Menlo Park, California, U.S.A.—September 18 to 19, 2007, hosted by U.S. Geological Survey. [<http://pubs.usgs.gov/of/2007/1144>]

6. Graizer V, **Todorovska MI** (organizers). Rotations in strong-motion seismology, Special Session of SSA 2012, Seismological Society of America Annual Meeting, San Diego, CA, 17-19 April, 2012.
7. **Todorovska MI**, Philippe Gueguen (organizers). Structural Health Monitoring and Earthquake Damage Detection in Structures, Special Session of SSA 2015, Seismological Society of America Annual Meeting, Pasadena, CA, 21-25 April, 2015.
8. Kohler M, **Todorovska MI**, Ebrahimian H (organizers). "Integrating structural health monitoring and damage identification with post-disaster decision making and emergency response management", special session at 11<sup>th</sup> National Conference on Earthquake Engineering, June 25-29, 2018, Los Angeles, CA.
9. Co-chair, 1st International Conference on Safety and Resilience of Infrastructure (ICSRI 2024), organized by Tianjin University, National Facility for Earthquake Engineering Simulation, Tianjin, China, 12-15 August 2024.

### YouTube Sites

- @TPYC-seismic (2024). <https://www.youtube.com/@TPYC-seismic>

### Strong Motion Data Releases on the WWW

1. Strong motion building response data of the Northridge earthquakes of January 17, 1994, and its aftershocks from the archives of the National Strong Motion Program, recorded in seven USGS and "code" buildings, URL: [www.usc.edu/dept/civil\\_eng/Earthquake\\_eng/USGS\\_build/](http://www.usc.edu/dept/civil_eng/Earthquake_eng/USGS_build/) (2004, 2005, funded by USGS).
2. Strong ground motion data of  $M_L=7.0$  Hector Mine earthquake of October 16, 1999 recorded at stations of the Los Angeles Strong Motion Network, URL: [www.usc.edu/dept/civil\\_eng/Earthquake\\_eng/Hector\\_eq/](http://www.usc.edu/dept/civil_eng/Earthquake_eng/Hector_eq/) (1999, funded by NSF).
3. Strong ground motion data of  $M_L=6.4$  Northridge earthquake of January 17, 1994, and five  $M>5$  aftershocks recorded at USC, USGS and DWP stations, URL: [www.usc.edu/dept/civil\\_eng/Earthquake\\_eng/North\\_M5/](http://www.usc.edu/dept/civil_eng/Earthquake_eng/North_M5/) (digitized and processed strong ground motion data 1999, funded by USGS).
4. Strong ground motion data of  $M_L=6.4$  Northridge earthquake of January 17, 1994, recorded at stations of the Los Angeles Strong Motion Network, URL: <ftp://cwis.usc.edu/pub/todorovs/Northridge> (1995, funded by USGS and NSF).

### Theses

- Ph.D. Thesis: 'Investigation of earthquake response of long buildings', Feb. 1988, presented to the Graduate School, Univ. of Southern California, in partial fulfillment of the requirements for Ph.D. degree in Civil Engineering.
- M.Sc. Thesis: 'Surface motion of circular alluvial valleys of variable depth for incident plane SH waves', Dec. 1988, presented to the Graduate School, University of Southern California, in partial fulfillment of the requirements for M.Sc. degree in Applied Mathematics.

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