

## Assoc. Prof. ZEHRA ERTUĞRUL

### Personal Information

**Email:** zehrae@metu.edu.tr

**Web:** <https://avesis.metu.edu.tr/zehrae>

### International Researcher IDs

ScholarID: ij3wTIQAAAAJ

ORCID: 0000-0001-6218-3357

Publons / Web Of Science ResearcherID: AAZ-9892-2020

ScopusID: 8219068500

Yoksis Researcher ID: 111552

### Research Areas

Engineering and Technology

### Academic Titles / Tasks

Associate Professor, Middle East Technical University, Faculty of Engineering, Department of Engineering Sciences, 2020 - Continues

Associate Professor, Ted University, Faculty Of Engineering-Architecture, Department Of Civil Engineering, 2014 - 2020

Associate Professor, Middle East Technical University, Engineering Faculty, Civil Engineering, 2013 - 2014

Assistant Professor, Middle East Technical University, Engineering Faculty, Civil Engineering, 2008 - 2013

Lecturer, Middle East Technical University, Engineering Faculty, Civil Engineering, 2007 - 2008

Lecturer, Middle East Technical University, Engineering Faculty, Civil Engineering, 2006 - 2007

### Courses

Engineering Mechanics I, Undergraduate, 2020 - 2021

Computing Methods in Engineering, Undergraduate, 2020 - 2021

### Published journal articles indexed by SCI, SSCI, and AHCI

- I. **1D reference V-S profiles compatible with ground-motion prediction equations developed for Turkey**  
ERTUĞRUL Z.  
BULLETIN OF EARTHQUAKE ENGINEERING, vol.21, no.4, pp.1775-1792, 2023 (SCI-Expanded)
- II. **On how the ergodic assumption influences seismic risk**  
Cagnan Z.  
BULLETIN OF EARTHQUAKE ENGINEERING, vol.19, no.1, pp.1-25, 2021 (SCI-Expanded)
- III. **Assessment of Aleatory and Epistemic Uncertainty for Ground-Motion Intensity Measure Prediction in Turkey**  
Cagnan Z., Akkar S.  
BULLETIN OF THE SEISMOLOGICAL SOCIETY OF AMERICA, vol.109, no.1, pp.263-283, 2019 (SCI-Expanded)

- IV. **Seismic behaviour of the old-type gravity load designed deteriorated RC buildings in Cyprus**  
Safkan I., Sensoy S., Cagnan Z.  
ENGINEERING FAILURE ANALYSIS, vol.82, pp.198-207, 2017 (SCI-Expanded)
- V. **A model for predicting vertical component peak ground acceleration (PGA), peak ground velocity (PGV), and 5% damped pseudospectral acceleration (PSA) for Europe and the Middle East**  
Cagnan Z., Akkar S., Kale O., SANDIKKAYA M. A.  
BULLETIN OF EARTHQUAKE ENGINEERING, vol.15, no.7, pp.2617-2643, 2017 (SCI-Expanded)
- VI. **Numerical models for the seismic assessment of St. Nicholas Cathedral, Cyprus**  
Cagnan Z.  
SOIL DYNAMICS AND EARTHQUAKE ENGINEERING, vol.39, pp.50-60, 2012 (SCI-Expanded)
- VII. **A Predictive Ground-Motion Model for Turkey and Its Comparison with Recent Local and Global GMPEs**  
Cagnan Z., Akkar S., Guelkan P.  
EARTHQUAKE DATA IN ENGINEERING SEISMOLOGY: PREDICTIVE MODELS, DATA MANAGEMENT AND NETWORKS, vol.14, pp.39-52, 2011 (SCI-Expanded)
- VIII. **A Local Ground-Motion Predictive Model for Turkey, and Its Comparison with Other Regional and Global Ground-Motion Models**  
Akkar S., Cagnan Z.  
BULLETIN OF THE SEISMOLOGICAL SOCIETY OF AMERICA, vol.100, no.6, pp.2978-2995, 2010 (SCI-Expanded)
- IX. **Rapid earthquake hazard and loss assessment for Euro-Mediterranean region**  
Erdik M., Sesetyan K., Demircioglu M., Hancilar U., Zulfikar C., Cakti E., Kamer Y., Yenidogan C., Tuzun C., Cagnan Z., et al.  
ACTA GEOPHYSICA, vol.58, no.5, pp.855-892, 2010 (SCI-Expanded)
- X. **The recently compiled Turkish strong motion database: preliminary investigation for seismological parameters**  
Akkar S., Cagnan Z., Yenier E., Erdogan O., Sandikkaya M. A., Gulkan P.  
JOURNAL OF SEISMOLOGY, vol.14, no.3, pp.457-479, 2010 (SCI-Expanded)
- XI. **Seismic hazard assessment for Cyprus**  
Cagnan Z., Tanircan G.  
JOURNAL OF SEISMOLOGY, vol.14, no.2, pp.225-246, 2010 (SCI-Expanded)
- XII. **Development of earthquake lossmap for Europe**  
Cagnan Z., ŞEŞETİYAN K., Zulfikar C., DEMİRCİOĞLU M. B., Kariptas C., Durukal E., Erdik M.  
JOURNAL OF EARTHQUAKE ENGINEERING, vol.12, pp.37-47, 2008 (SCI-Expanded)
- XIII. **A comparative study of European earthquake loss estimation tools for a scenario in Istanbul**  
Strasser F. O., Bommer J. J., Şeşetyan K., Erdik M. Ö., Cagnan Z., Irizarry J., Goula X., Lucantoni A., Sabetta F., Bal I. E., et al.  
JOURNAL OF EARTHQUAKE ENGINEERING, vol.12, pp.246-256, 2008 (SCI-Expanded)
- XIV. **Optimizing scheduling of post-earthquake electric power restoration tasks**  
Xu N., Guikema S. D., Davidson R. A., Nozick L. K., Cagnan Z., Vaziri K.  
EARTHQUAKE ENGINEERING & STRUCTURAL DYNAMICS, vol.36, no.2, pp.265-284, 2007 (SCI-Expanded)
- XV. **Post-earthquake restoration planning for Los Angeles electric power**  
Cagnan Z., Davidson R. A., Guikema S. D.  
EARTHQUAKE SPECTRA, vol.22, no.3, pp.589-608, 2006 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Discrete event simulation of the post-earthquake restoration process for electric power systems**  
ERTUĞRUL Z., Davidson R. A.  
International Journal of Risk Assessment and Management, vol.7, no.8, pp.1138-1156, 2007 (Scopus)

## Refereed Congress / Symposium Publications in Proceedings

- I. **VS Profiles for Turkey**  
ŞEN A. C., ERTUĞRUL Z.  
7th International Conference on Earthquake Engineering and Seismology, ICEES 2023, Antalya, Turkey, 6 - 10 November 2023, vol.401 LNCE, pp.123-135
- II. **SENSITIVITY ANALYSIS FOR DERIVATION OF 1D VS PROFILES USING INVERSE QUARTER-WAVELENGTH THEORY**  
Ozisin M., ERTUĞRUL Z.  
9th ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, COMPDYN 2023, Athens, Greece, 12 - 14 June 2023
- III. **Advantages of industry-academia partnerships for the development of professional competences in civil engineering**  
Akan O. D., Bilgin G., ERTUĞRUL Z.  
10th International Symposium on Project Approaches in Engineering Education, PAEE 2018 and 15th Active Learning in Engineering Education Workshop, ALE 2018, Brasilia, Brazil, 28 February - 02 March 2018, vol.8, pp.90-98
- IV. **Single station sigma for Turkish strong motion stations**  
ERTUĞRUL Z., Akkar S.  
6th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, COMPDYN 2017, Rhodes Island, Greece, 15 - 17 June 2017, vol.2, pp.4527-4545
- V. **Dynamic response of a gothic cathedral in Cyprus**  
ERTUĞRUL Z., Chrysostomou C. Z., Kyriakides N., Votsis R. A.  
5th ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, COMPDYN 2015, Hersonissos, Crete, Greece, 25 - 27 May 2015, pp.3726-3738
- VI. **Computer modelling and seismic performance assessment of a byzantine basilica**  
ERTUĞRUL Z.  
3rd International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, COMPDYN 2011, Corfu, Greece, 25 - 28 May 2011
- VII. **Seismic hazard of Eastern Mediterranean region**  
ERTUĞRUL Z., Akkar S.  
9th US National and 10th Canadian Conference on Earthquake Engineering 2010, Including Papers from the 4th International Tsunami Symposium, Toronto, Canada, 25 - 29 July 2010, vol.4, pp.3251-3260
- VIII. **Optimization of crews in post-earthquake electric power restoration**  
Guikema S., Xu N., Davidson R., Nozick L., ERTUĞRUL Z.  
8th US National Conference on Earthquake Engineering 2006, San Francisco, CA, United States Of America, 18 - 22 April 2006, vol.7, pp.3727-3736
- IX. **Efficient simulation-based discrete optimization**  
Guikema S., Davidson R., Cagnan Z.  
Winter Simulation Conference 2004, Washington, Kiribati, 5 - 08 December 2004, pp.536-544
- X. **Post-Earthquake Lifeline Service Restoration Modeling**  
ERTUĞRUL Z., Davidson R.  
Proceedings of the Sixth U.S. Conference and Workshop on Lifeline Earthquake Engineering, Long Beach, CA, United States Of America, 10 - 13 August 2003, pp.255-264

## Scientific Refereeing

ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering, Journal Indexed in SCI-E, October 2023

SOIL DYNAMICS AND EARTHQUAKE ENGINEERING, SCI Journal, July 2023

JOURNAL OF INFRASTRUCTURE SYSTEMS, Journal Indexed in SCI-E, September 2022

SEISMOLOGICAL SOCIETY OF AMERICA. BULLETIN, SCI Journal, June 2022

JOURNAL OF INFRASTRUCTURE SYSTEMS, Journal Indexed in SCI-E, June 2022

JOURNAL OF INFRASTRUCTURE SYSTEMS, Journal Indexed in SCI-E, April 2021

ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering, Journal Indexed in SCI-E, January 2021

## **Metrics**

Publication: 28

Citation (WoS): 521

Citation (Scopus): 701

H-Index (WoS): 9

H-Index (Scopus): 10

## **Non Academic Experience**

Üçok Tasarım, Mimarlık ve Mühendislik Bürosu