

Assoc. Prof. Zeynep Değer

Personal Information

Office Phone: [+90 212 285 7531](tel:+902122857531)

Fax Phone: [+90 212 285 3672](tel:+902122853672)

Other Email: zeynep.tuna@itu.edu.tr

Web: <https://avesis.itu.edu.tr/tunaz>

International Researcher IDs

ORCID: 0000-0003-3585-6477

Publons / Web Of Science ResearcherID: E-1769-2015

ScopusID: 56338836000

Yoksis Researcher ID: 199493

Education Information

Doctorate, University of California, Los Angeles, Department Of Civil And Environmental Engineering, United States Of America 2009 - 2012

Postgraduate, University of California, Los Angeles, Department Of Civil And Environmental Engineering , United States Of America 2008 - 2009

Undergraduate, Middle East Technical University, Faculty Of Engineering, Department Of Civil Engineering, Turkey 2003 - 2008

Foreign Languages

English

Dissertations

Doctorate, Seismic Performance, Modeling, and Failure Assessment of Reinforced Concrete Shear Wall Buildings, University Of California, Los Angeles, Department Of Civil And Environmental Engineering, 2012

Postgraduate, Quantification of seismic performance levels of tall buildings, University Of California, Los Angeles, Department Of Civil And Environmental Engineering , 2009

Research Areas

Technical Sciences, Civil Engineering, Structure, Structural Engineering, Earthquake Engineering

Academic Titles / Tasks

Assistant Professor, Istanbul Technical University, Afet Yönetimi Enstitüsü, Deprem Mühendisliği, 2018 - Continues

Assistant Professor, Istanbul Technical University, Afet Yönetimi Enstitüsü, Deprem Mühendisliği Ve Afet Yönetimi Enstitüsü, 2017 - 2018

Lecturer PhD, Istanbul Technical University, Afet Yönetimi Enstitüsü, Deprem Mühendisliği Ve Afet Yönetimi Enstitüsü,

2014 - 2017

Academic and Administrative Experience

İstanbul Teknik Üniversitesi, 2017 - Continues

Courses

Structural Earthquake Engineering, Postgraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017, 2015 - 2016

Structural Design of Tall Buildings, Postgraduate, 2021 - 2022

Yüksek Binaların Sismik Davranışı, Postgraduate, 2021 - 2022, 2020 - 2021

Advising Theses

Değer Z., Betonarme bir yüksek binanın 2018 Türkiye bina deprem yönetmeliğine göre performans esaslı tasarımı ve bodrum perde duvar yerleşiminin tasarıma etkisi, Postgraduate, U.GÖKÇEOĞLU(Student), 2020

Değer Z., Yüksek binalarda düşey yer hareketinin etkisi, Postgraduate, A.ÇOPUROĞLU(Student), 2019

Değer Z., CPU-accelerated earthquake simulations for large scale urban cities, Postgraduate, M.UYSAL(Student), 2019

Değer Z., Depremlerde meydana gelen tipik betonarme yapı hasarlarına 2018 türkiye bina deprem yönetmeliğine göre alınabilecek önlemler, Postgraduate, E.YILMAZ(Student), 2019

Değer Z., SEISMIC ENERGY RESPONSE OF A 42-STORY REINFORCED CONCRETE TALL BUILDING, Postgraduate, A.ÇİLENK(Student), 2018

Değer Z., Betonarme perdelerin deformasyon kapasitesinin incelenmesi, Postgraduate, Ç.BAŞDOĞAN(Student), 2017

Değer Z., Betonarme perdelerin kesme dayanımının incelenmesi, Postgraduate, Ç.İNCEOĞLU(Student), 2016

Jury Memberships

Post Graduate, Yer Hareketlerinin Karakteristik Özelliklerinin Binaların Yapısal Enerji Davranışı Üzerindeki Etkileri, İstanbul Teknik Üniversitesi, July, 2017

Post Graduate, BETONARME PERDELERİN DEFORMASYON KAPASİTESİNİN İNCELENMESİ, İstanbul Teknik Üniversitesi, July, 2017

Post Graduate, Betonarme Perdelerin Kesme Dayanımının İncelenmesi, İstanbul Teknik Üniversitesi, January, 2017

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Earthquake-induced energy response of reinforced concrete dual-system tall buildings**
Deger Z.
Proceedings of the Institution of Civil Engineers: Structures and Buildings, vol.176, no.2, pp.81-90, 2023 (SCI-Expanded)
- II. **Machine learning-based predictive models for equivalent damping ratio of RC shear walls**
Yaghoubi S. T., Değer Z., Taşkın Kaya G., Sütcü F.
BULLETIN OF EARTHQUAKE ENGINEERING, vol.21, pp.293-318, 2023 (SCI-Expanded)
- III. **Machine learning-based estimation of energy dissipation capacity of RC shear walls**
Topaloglu B., Kaya G. T., Sütcü F., Değer Z.
STRUCTURES, vol.45, pp.343-352, 2022 (SCI-Expanded)
- IV. **Glass-box model representation of seismic failure mode prediction for conventional reinforced**

concrete shear walls

Değer Z., Kaya G. T.

NEURAL COMPUTING & APPLICATIONS, vol.34, no.15, pp.13029-13041, 2022 (SCI-Expanded)

- V. **A novel GPR-based prediction model for cyclic backbone curves of reinforced concrete shear walls**
Değer Z., Taşkın Kaya G.
ENGINEERING STRUCTURES, vol.255, 2022 (SCI-Expanded)
- VI. **Empirical Equations for Shear Strength of Conventional Reinforced Concrete Shear Walls**
Değer Z., Basdogan C.
ACI STRUCTURAL JOURNAL, vol.118, no.2, pp.61-71, 2021 (SCI-Expanded)
- VII. **Nonlinear modeling and damage limits of reinforced concrete shear walls based on lumped plasticity behavior**
Değer Z., Basdogan C.
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.36, no.2, pp.641-653, 2021 (SCI-Expanded)
- VIII. **Empirical Expressions for Deformation Capacity of Reinforced Concrete Structural Walls**
Değer Z., Basdogan C.
ACI STRUCTURAL JOURNAL, vol.116, no.6, pp.53-61, 2019 (SCI-Expanded)
- IX. **BETONARME BİR DENEY BİNASININ HASAR DÜZEYİNİN TÜRK DEPREM YÖNETMELİĞİNE DBYBHY 2007 GÖRE BELİRLENMESİ**
Değer Z.
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.32, no.2, pp.481-488, 2017 (SCI-Expanded)
- X. **Damage assessment of a reinforced concrete test building based on Turkish Seismic Code 2007**
Değer Z.
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.32, no.2, pp.481-488, 2017 (SCI-Expanded)
- XI. **Seismic performance of reinforced concrete dual-system buildings designed using two different design methods**
Değer Z., WALLACE J. W.
STRUCTURAL DESIGN OF TALL AND SPECIAL BUILDINGS, vol.25, no.1, pp.45-59, 2016 (SCI-Expanded)
- XII. **Collapse Assessment of the Alto Rio Building in the 2010 Chile Earthquake**
Değer Z., WALLACE J. W.
EARTHQUAKE SPECTRA, vol.31, no.3, pp.1397-1425, 2015 (SCI-Expanded)
- XIII. **Seismic performance of reinforced concrete core wall buildings with and without moment resisting frames**
Değer Z., Yang T. Y., WALLACE J. W., MOEHLE J.
STRUCTURAL DESIGN OF TALL AND SPECIAL BUILDINGS, vol.24, no.7, pp.477-490, 2015 (SCI-Expanded)

Refereed Congress / Symposium Publications in Proceedings

- I. **An explainable meta-modeling approach to investigate the energy behavior of reinforced concrete structural walls**
DEĞER Z., TAŞKIN KAYA G.
12th US National Conference on Earthquake Engineering, Salt Lake City, United States Of America, 27 June - 01 July 2022
- II. **Investigation of Influential Parameters on Energy Dissipation Capacity of RC Shear Walls Based on Machine Learning Methods**
Topaloğlu B., TAŞKIN KAYA G., SÜTCÜ F., DEĞER Z.
6th International Earthquake Engineering and Seismology Conference – 6ICEES, Kocaeli, Turkey, 13 October 2021
- III. **EMPIRICAL EQUATIONS FOR DEFORMATION CAPACITY OF CONVENTIONAL RC SHEAR WALLS**

- DEĞER Z., Basdogan C.
17th World Conference on Earthquake Engineering, 27 September - 02 October 2021
- IV. **CPU-accelerated earthquake simulations for large scale urban cities**
Uysal M., DEĞER Z., Cimellaro G. P.
Engineering Mechanics Institute Conference 2019, Los-Angeles, Chile, 18 - 21 June 2019
- V. **DEFORMATION CAPACITY OF REINFORCED CONCRETE SHEAR WALLS**
DEĞER Z., Basdogan C.
Eleventh US National Conference on Earthquake Engineering, 25 - 29 June 2018
- VI. **SEISMIC ENERGY RESPONSE OF A 42-STORY REINFORCED CONCRETE TALL BUILDING**
DEĞER Z.
Eleventh U.S. National Conference on Earthquake Engineering, 26 - 29 June 2018
- VII. **EFFECT OF VERTICAL COMPONENT OF GROUND MOTIONS ON TALL BUILDINGS: AN RC DUAL SYSTEM CASE STUDY**
Değer Z., Ebrahimi S., Zareian F.
11th National Conference on Earthquake Engineering, Los Angeles, United States Of America, 25 - 29 June 2018, pp.1-11
- VIII. **EFFECTS OF NEAR-FAULT GROUND MOTION CHARACTERISTICS ON STRUCTURAL ENERGY RESPONSE OF BUILDINGS**
SÜTCÜ F., DEĞER Z., Akiyama H.
16th European Conference on Earthquake Engineering, 18 - 21 June 2018
- IX. **Reliability of RC Wall Shear Strength Equations in Modern Seismic Codes**
Değer Z., Inceoglu C.
16th World Conference on Earthquake Engineering, Santiago, Chile, 9 - 13 January 2017
- X. **Estimation of Deformation Capacity of Reinforced Concrete Shear Walls**
Değer Z., Basdoğan Ç.
16th World Conference on Earthquake Engineering, Santiago, Chile, 9 - 13 January 2017
- XI. **Evaluation of Earthquake Input Energy Distribution in an RC Building for an Energy- Based Seismic Design Approach**
DEĞER Z., SÜTCÜ F.
16th World Conference on Earthquake Engineering, 9 - 13 January 2017
- XII. **Betonarme Perdelerde Kesme Dayanımının İncelenmesi**
Değer Z., Basdoğan Ç.
PROF. DR. M. HASAN BODUROĞLU SEMPOZYUMU, İstanbul, Turkey, 9 - 10 May 2016
- XIII. **Shear Strength and Deformation Capacity of Reinforced Concrete Shear Walls**
Değer Z., Basdoğan Ç., Gulkan P.
2016 EERI ANNUAL MEETING, San Francisco, United States Of America, 5 - 08 April 2016
- XIV. **Assessment of RC Wall Shear Strength Provisions in Seismic Codes**
Değer Z., Basdoğan Ç.
10th Pacific Conference on Earthquake Engineering, Sydney, Australia, 6 - 08 November 2015
- XV. **42 Katli Betonarme Binanın Farklı Tasarım Yöntemleri İçin Yapısal Ve Finansal Performans Değerlendirmesi**
Değer Z., Wallace J. W.
8. Ulusal Deprem Mühendisliği Konferansı, İstanbul, Turkey, 11 - 15 May 2015, pp.1187-1196
- XVI. **2010 E Defense Four Story Reinforced Concrete and Post Tensioned Buildings Comparative Study of Experimental and Analytical Results**
Tuna Z., Gavridou S., WALLACE J. W., Nagae T., Matsumori T.
10th National Conference on Earthquake Engineering, Anchorage, Ak, United States Of America, 21 - 25 July 2014, pp.2244-2255
- XVII. **2010 E Defense Four Story Reinforced Concrete and Post Tensioned Buildings Preliminary Comparative Study of Experimental and Analytical Results**
TUNA Z., GAVRIDOU S., WALLACE J. W., NAGAE T., MATSUMORI T.

15th World Conference on Earthquake Engineering, Lizbon, Portugal, 24 - 28 September 2012

XVIII. Seismic performance of reinforced concrete core wall buildings with and without moment resisting frames

TUNA Z., Wallace J. W., Yang T. Y., Moehle J. P.

15th World Conference on Earthquake Engineering, Portugal, 24 - 28 September 2012

XIX. Preliminary Collapse Assessment of the Torre Alto Rio Building in the Mw = 8.8 February 27, 2010 Chile Earthquake

Tuna Z., Wallace J. W.

ACI Spring Convention 2011, Tampa, FL, United States Of America, 3 - 07 April 2011

Supported Projects

Değer Z., Project Supported by Higher Education Institutions, EFFECT OF VERTICAL COMPONENT OF GROUND MOTIONS ON REINFORCED CONCRETE TALL BUILDINGS, 2018 - 2020

Değer Z., Project Supported by Higher Education Institutions, SHEAR STRENGTH AND DEFORMATION CAPACITY OF REINFORCED CONCRETE SHEAR WALLS, 2016 - 2018

Değer Z., Project Supported by Higher Education Institutions, ASSESSMENT OF REINFORCED CONCRETE WALL SHEAR STRENGTH PROVISIONS IN SEISMIC CODES, 2015 - 2018

Değer Z., Project Supported by Higher Education Institutions, 2010 E-Defense Four-Story Reinforced Concrete and Post-Tensioned Buildings - Coparative Study of Experimental and Analytical Results, 2014 - 2018

Scientific Refereeing

The Structural Design of Tall and Special Buildings, SCI Journal, June 2017

Canadian Journal of Civil Engineering, SCI Journal, April 2017

Earthquake Engineering and Engineering Vibration, SCI Journal, December 2015

JOURNAL OF ENGINEERING MECHANICS - ASCE, SCI Journal, October 2015

JOURNAL OF STRUCTURAL ENGINEERING-ASCE, SCI Journal, October 2015

JOURNAL OF STRUCTURAL ENGINEERING-ASCE, SCI Journal, September 2014

Metrics

Publication: 38

Citation (WoS): 16

Citation (Scopus): 24

H-Index (WoS): 2

H-Index (Scopus): 3

Congress and Symposium Activities

16th World Conference on Earthquake Engineering, Attendee, Santiago, Chile, 2017

EERI Annual Meeting, Attendee, California, United States Of America, 2016

10th Pacific Conference on Earthquake Engineering, Attendee, Sydney, Australia, 2015

8. Ulusal Deprem Mühendisliği Konferansı, Attendee, İstanbul, Turkey, 2015

Tenth U.S. National Conference on Earthquake Engineering Frontiers of Earthquake Engineering, Attendee, Alaska, United States Of America, 2014

NSF CMMI Engineering Research and Innovation Conference, Attendee, Massachusetts, United States Of America, 2012

PEER Annual Meeting, Attendee, California, United States Of America, 2011

ACI Spring Convention, Attendee, Florida, United States Of America, 2011

8th International Conference on Urban Earthquake Engineering, Attendee, Tôkyô, Japan, 2011

Quake Summit: NEES/PEER Joint Annual Meeting, Attendee, California, United States Of America, 2010

8th Planning Meeting of NEES/E-Defense Collaborative Research on Earthquake Engineering, Attendee, Kôbe, Japan, 2010

Tall Buildings Structural Design Council: Tall Building Design Showcase, Attendee, California, United States Of America, 2010

Non Academic Experience

University of California, Los Angeles