

## Prof. HALUK SUCUOĞLU

### Personal Information

**Office Phone:** [+90 312 210 5480](tel:+903122105480)

**Email:** [sucuoglu@metu.edu.tr](mailto:sucuoglu@metu.edu.tr)

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

### International Researcher IDs

ScholarID: Kht8OysAAAAJ

ORCID: 0000-0003-4475-8182

Publons / Web Of Science ResearcherID: J-3654-2016

ScopusID: 57221862225

Yoksis Researcher ID: 163267

### Education Information

Doctorate, Middle East Technical University, Faculty of Engineering, Department of Engineering Sciences, Turkey 1976 - 1982

Postgraduate, Middle East Technical University, Faculty of Engineering, Department of Civil Engineering, Turkey 1974 - 1976

Undergraduate, Middle East Technical University, Faculty of Engineering, Department of Civil Engineering, Turkey 1970 - 1974

### Dissertations

Doctorate, Yığma duvarların deprem davranışı, Middle East Technical University, Faculty of Engineering, Department of Engineering Sciences, 1982

Postgraduate, Betonarme Çerçevelerin Deprem Davranışı, Middle East Technical University, Faculty of Engineering, Department of Civil Engineering, 1976

### Academic Titles / Tasks

Professor, Middle East Technical University, Faculty of Engineering, Department of Civil Engineering, 1978 - Continues

### Advising Theses

ERBERİK M. A., SUCUOĞLU H., ENERGY BASED SEISMIC ASSESSMENT AND DESIGN, Doctorate, F.SONER(Student), 2019

SUCUOĞLU H., Inelastic Seismic Response Analysis and Design of Torsionally Coupled Systems, Doctorate,

K.KAATSIZ(Student), 2019

SUCUOĞLU H., YILMAZ M. T., An investigation of seismic face stability of deep tunnels by using an axisymmetric finite element model, Postgraduate, H.ELIZABETH(Student), 2018

SUCUOĞLU H., KURÇ Ö., A comparative study on nonlinear modeling of structural walls, Postgraduate, S.EREN(Student), 2018

SUCUOĞLU H., Performance based seismic design of reinforced concrete tall buildings, Postgraduate, E.BUDAK(Student), 2015

SUCUOĞLU H., A general evaluation of linear elastic assessment procedures in seismic codes, Postgraduate, U.ÖZÇAMUR(Student), 2014

SUCUOĞLU H., A linear modal combination procedure for structural dynamics, Postgraduate, S.TANIŞER(Student), 2013

BİNİCİ B., SUCUOĞLU H., Modelling effects of insufficient lap splices on a deficient reinforced concrete frame, Postgraduate, W.WEI(Student), 2013

SUCUOĞLU H., Linear modal combination procedure for structural dynamics, Postgraduate, S.Tanişer(Student), 2013

SUCUOĞLU H., Generalized pushover analysis, Postgraduate, F.SONER(Student), 2012

SUCUOĞLU H., Generalized pushover analysis for unsymmetrical plan buildings, Postgraduate, K.KAATSIZ(Student), 2012

SUCUOĞLU H., A nonlinear equivalent frame model for displacement based analysis of unreinforced brick masonry buildings, Postgraduate, İ.OZAN(Student), 2010

SUCUOĞLU H., Displacement-based seismic rehabilitation of non-ductile RC frames with added shear walls, Postgraduate, C.KARAGEYİK(Student), 2010

ERBERİK M. A., SUCUOĞLU H., Energy based seismic performance assessment of reinforced concrete columns, Doctorate, B.ACUN(Student), 2010

SUCUOĞLU H., An equivalent linearization procedure for seismic response prediction of MDOF systems, Doctorate, M.SELİM(Student), 2008

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SUCUOĞLU H., Dynamic pull analysis for estimating seismic response, Postgraduate, C.DEĞİRMENCİ(Student), 2006

SUCUOĞLU H., A comparative assessment of an existing reinforced concrete building by using different seismic rehabilitation codes and procedures, Postgraduate, İ.ÖZTÜRK(Student), 2006

SUCUOĞLU H., Performance evaluation of existing medium rise reinforced concrete buildings according to 2006 Turkish Seismic Rehabilitation Code, Postgraduate, Z.DÜZCE(Student), 2006

ÇETİN K. Ö., SUCUOĞLU H., Effects of soil structure interaction and base isolated systems on seismic performance of foundation soils, Postgraduate, S.SOYÖZ(Student), 2004

SUCUOĞLU H., Simplified procedures for seismic assessment of medium rise reinforced concrete building structures, Postgraduate, M.SELİM(Student), 2003

SUCUOĞLU H., Seismic evaluation of school buildings after the 12 November 1999 Düzce earthquake., Postgraduate, H.AYDIN(Student), 2002

SUCUOĞLU H., Seismic performance assessment of a residential building in Düzce during the 12 November 1999 Düzce Earthquake., Postgraduate, S.Bayılı(Student), 2002

SUCUOĞLU H., Assessment of seismic retrofitting by life cycle costing method, Postgraduate, G.MACİT(Student), 2002

SUCUOĞLU H., Seismic performance assessment of a residential building in Düzce during the 12 November 1999 Düzce earthquake, Postgraduate, S.BAYILI(Student), 2002

SUCUOĞLU H., Cost comparison of clay brick and AAC masonry walls employed in seismic resistant masonry and reinforced concrete building construction., Postgraduate, H.Burak(Student), 2001

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SUCUOĞLU H., Energy based seismic evaluation of degrading systems, Doctorate, M.ALTUĞ(Student), 2001

POLAT U., SUCUOĞLU H., Development of a uniaxial shaking table and a data acquisition system, Postgraduate, A.Korucu(Student), 1999

SUCUOĞLU H., Capacity evaluation of damaged and repaired structures, Postgraduate, T.GÜR(Student), 1999

SUCUOĞLU H., A methodology for the seismic damage assessment of low-rise reinforced concrete buildings, Postgraduate, K.Omane(Student), 1998

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SUCUOĞLU H., Performance and cost evaluation of reinforced concrete buildings designed according to 1975 and 1997 Turkish Seismic Design Codos, Postgraduate, M.HAKAN(Student), 1998

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SUCUOĞLU H., Controlling the seismic behaviour of exterior reinforced concrete frame joints with relocated beam plastic

hinges, Postgraduate, E.Başaran(Student), 1997

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SUCUOĞLU H., Influence of earthquake ground motion characteristics on structural damage and seismic response reduction, Postgraduate, M.AL TUĞ(Student), 1995

SUCUOĞLU H., Inelastic dynamic response analysis of an instrumented R/C building located on the North Anatolian fault, Postgraduate, M.ONUR(Student), 1995

SUCUOĞLU H., Characteristics of earthquake ground motions, Postgraduate, A.NUR TUĞ(Student), 1994

SUCUOĞLU H., Characteristics of earthquake ground motions, Postgraduate, A.Nurtuğ(Student), 1994

SUCUOĞLU H., The Effect of connection characteristics on the inelastic seismic behavior of precast frames, Postgraduate, A.YUSUF(Student), 1992

SUCUOĞLU H., An Interactive computer program to generate in elastic response spectra, Postgraduate, A.ŞAHİN(Student), 1991

SUCUOĞLU H., Seismic shear strenght of reinforced masonry piers, Postgraduate, N.SHİRALİ(Student), 1989

SUCUOĞLU H., An Approximate method for the nonlinear seismic analysis of soil layers, Postgraduate, E.MELTEM(Student), 1989

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SUCUOĞLU H., Inelastic spectral analysis of structural systems under seismic excitation, Postgraduate, M.DİCLELİ(Student), 1989

SUCUOĞLU H., Nonlinear collapse analysis of frame-wall structures, Postgraduate, H.TULUNAY(Student), 1989

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SUCUOĞLU H., Nonlinear seismic response of horizontally layered soil deposits, Postgraduate, A.MAHMOUD(Student), 1987

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- I. **Sharing data and code facilitates reproducible and impactful research**  
Baker J. W., Crowley H., Wald D., Rathje E., Au S., Bradley B. A., Burton H., Cabas A., Cattari S., Cauzzi C., et al.  
Earthquake Spectra, vol.40, no.3, pp.2210-2218, 2024 (SCI-Expanded)
- II. **A critical assessment of the design displacements of friction pendulum systems**  
Alıcı F. S., SUCUOĞLU H., Özçamur U.  
Soil Dynamics and Earthquake Engineering, vol.177, 2024 (SCI-Expanded)
- III. **Identification of Torsionally Stiff and Flexible Asymmetric Systems, and Their Comparative Seismic Response Evaluation for Low-Rise Frames**  
Kaatsız K., SUCUOĞLU H.  
Journal of Earthquake Engineering, vol.28, no.4, pp.998-1014, 2024 (SCI-Expanded)
- IV. **Seismic performance assessment of base isolation systems in five hospitals during the Mw7.8 and Mw7.6 2023 earthquakes in Southeast Turkey**  
Kaatsız K., Alıcı F. S., SUCUOĞLU H., Tanışer S., Kale Ö.  
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- V. **Vibration-based temporary monitoring of a 253 m tall skew-plan building in Istanbul**  
Çelik O. C., Budak E., Sucuoğlu H.  
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- VI. **Response parameters that control the service, safety and collapse performances of a 253 m tall concrete core wall building in Istanbul**  
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- VII. **Interstory drift based scaling of bi-directional ground motions**  
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- VIII. **Performance of structures in Izmir after the Samos island earthquake**  
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- IX. **Development of Fragility Curves for Single-Column RC Italian Bridges Using Nonlinear Static Analysis**  
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- XI. **Torsional ductility spectrum for predicting ductility distribution in simple asymmetric-plan structures**  
SUCUOĞLU H., Kaatsiz K.  
EARTHQUAKE ENGINEERING & STRUCTURAL DYNAMICS, vol.50, no.2, pp.538-559, 2021 (SCI-Expanded)
- XII. **Damping spectra for estimating inelastic deformations from modal response spectrum analysis**  
SUCUOĞLU H., Alici F. S.  
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- XIII. **The role of overstrength on the seismic performance of asymmetric-plan structures**  
KAATSIZ K., SUCUOĞLU H.  
EARTHQUAKE ENGINEERING & STRUCTURAL DYNAMICS, vol.48, no.4, pp.412-431, 2019 (SCI-Expanded)
- XIV. **Elastic and Inelastic Near-Fault Input Energy Spectra**  
Alici F. S., SUCUOĞLU H.  
EARTHQUAKE SPECTRA, vol.34, no.2, pp.611-637, 2018 (SCI-Expanded)
- XV. **Generalized force vectors for multi-mode pushover analysis of bridges**  
Perdomo C., Monteiro R., SUCUOĞLU H.  
BULLETIN OF EARTHQUAKE ENGINEERING, vol.15, no.12, pp.5247-5280, 2017 (SCI-Expanded)
- XVI. **Prediction of input energy spectrum: attenuation models and velocity spectrum scaling**  
Alici F. S., SUCUOĞLU H.  
EARTHQUAKE ENGINEERING & STRUCTURAL DYNAMICS, vol.45, no.13, pp.2137-2161, 2016 (SCI-Expanded)
- XVII. **Limitations on linear elastic procedures in performance assessment of regular frames**  
SUCUOĞLU H., Ozcamur U.  
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- XVIII. **Practical Implementation of Generalized Force Vectors for the Multimodal Pushover Analysis of Building Structures**  
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- XIX. **Seismic Risk Prioritization and Retrofit Cost Evaluation of Code-Deficient RC Public Buildings in Turkey**  
SUCUOĞLU H., YAKUT A., Ozmen A., Kubin J.  
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- XX. **Seismic performance of gravity-load designed concrete frames infilled with low-strength masonry**  
Siddiqui U. A., SUCUOĞLU H., YAKUT A.  
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- XXI. **Generalized force vectors for multi-mode pushover analysis of torsionally coupled systems**  
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- XXII. **Pseudo-Dynamic Testing, Performance Assessment, and Modeling of Deficient Reinforced Concrete Frames**  
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SUCUOĞLU H., Siddiqui U. A.  
JOURNAL OF EARTHQUAKE ENGINEERING, vol.18, no.8, pp.1281-1301, 2014 (SCI-Expanded)
- XXIV. **Implications of Masonry Infill and Partition Damage in Performance Perception in Residential Buildings after a Moderate Earthquake**  
SUCUOĞLU H.  
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- XXV. **Seismic Performance Assessment of Unreinforced Masonry Buildings with a Hybrid Modeling Approach**  
Aldemir A., ERBERİK M. A., Demirel I. O., SUCUOĞLU H.  
EARTHQUAKE SPECTRA, vol.29, no.1, pp.33-57, 2013 (SCI-Expanded)
- XXVI. **Seismic risk prioritization of residential buildings in Istanbul**  
YAKUT A., SUCUOĞLU H., Akkar S.  
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- XXVII. **Energy Dissipation Capacity of Reinforced Concrete Columns under Cyclic Displacements**  
Acun B., SUCUOĞLU H.  
ACI STRUCTURAL JOURNAL, vol.109, no.4, pp.531-540, 2012 (SCI-Expanded)
- XXVIII. **Energy-Based Hysteresis Model for Flexural Response of Reinforced Concrete Columns**  
SUCUOĞLU H., Acun B.  
ACI STRUCTURAL JOURNAL, vol.109, no.4, pp.541-549, 2012 (SCI-Expanded)
- XXIX. **Inelastic Displacement Response of RC Systems with Cyclic Deterioration-An Energy Approach**  
ERBERİK M. A., SUCUOĞLU H., Acun B.  
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- XXX. **Evaluation of the Performance Limit States of Reinforced Concrete Columns in View of Experimental Observations**  
Acun B., SUCUOĞLU H.  
TEKNIK DERGI, vol.22, pp.5523-5541, 2011 (SCI-Expanded)
- XXXI. **Generalized force vectors for multi-mode pushover analysis**  
SUCUOĞLU H., Gunay M. S.  
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- XXXII. **A Displacement-Based Approach for the Seismic Retrofitting of Medium Rise Non-Ductile RC Frames with Added Shear Walls**  
SUCUOĞLU H., Karageyik C.  
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- XXXIII. **An improvement to linear-elastic procedures for seismic performance assessment**  
Gunay M. S., SUCUOĞLU H.  
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- XXXIV. **Performance of Reinforced Concrete Columns Designed for Flexure under Severe Displacement Cycles**  
Acun B., SUCUOĞLU H.  
ACI STRUCTURAL JOURNAL, vol.107, no.3, pp.364-371, 2010 (SCI-Expanded)
- XXXV. **Pros And Cons of Assessment Methods in the 2007 Turkish Earthquake Code**  
Şenboz A., SUCUOĞLU H.  
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Guenay M. S., SUCUOĞLU H.  
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Gulkan P., Ceken U., Colakoglu Z., Ugras T., Kuru T., Apak A., Anderson J. G., Sucuoglu H., Celebi M., Akkar D. S., et al.  
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- XL. **Performance-based seismic rehabilitation of damaged reinforced concrete buildings**  
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- XLI. **Seismic energy dissipation in deteriorating systems through low-cycle fatigue**  
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- XLIII. **Predicting intensity and damage distribution during the 1995 Dinar, Turkey, earthquake with generated strong motion accelerograms**  
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- LIII. **ENGINEERING EVALUATION OF THE 1 OCTOBER 1995 DINAR EARTHQUAKE (ML=5.9)**  
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- LVI. **EARTHQUAKE GROUND MOTION CHARACTERISTICS AND SEISMIC ENERGY-DISSIPATION**  
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- LVII. **Inelastic seismic response of precast concrete frames with constructed plastic hinges**  
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## Books & Book Chapters

- I. **Application of Mesh Reinforced Mortar for Performance Enhancement of Hollow Clay Tile Infill walls**  
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- II. **Rapid Seismic Assessment Procedures for the Turkish Building Stock**  
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- VI. **Binalar için Deprem Mühendisliği Temel İlkeler**  
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- VII. **An equivalent linearization procedure for displacement-based seismic assessment of vulnerable RC buildings**  
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- VIII. **In defence of Zeytinburnu**  
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- I. **Reconstruction of a Damaged Region in Antakya with Seismic Isolation Technology**  
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- II. **Effects of Torsional Flexibility in Asymmetric Systems**  
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- III. **Seismic Performance Investigation of Base Isolated Hospital Buildings After Kahramanmaraş Earthquakes**  
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- IV. **Predicting the Distribution of Hysteretic Energy Demand in Frame Members**  
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2nd International Workshop on Energy-Based Seismic Engineering, IWEBSE 2023, Porto, Portugal, 3 - 06 July 2023, vol.236 LNCE, pp.1-13
- V. **Estimation of ductility in asymmetric-plan structures**  
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- VII. **New Improvements in the 2018 Turkish Seismic Code**  
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FIB IWAMISSE 2018: International Workshop on Advanced Materials and Innovative Systems in Structural Engineering, İstanbul, Turkey, 18 October 2018
- VIII. **Investigation of Overstrength in Asymmetric-Plan Structures**  
KAATSIZ K., SUCUOĞLU H.  
16th European Conference on Earthquake Engineering, Thessaloniki, Greece, 18 - 21 June 2018
- IX. **Performance Based Seismic Evaluation of a 62 Story RC Tower in Istanbul**  
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- X. **Prediction of input energy spectrum: prediction models and velocity spectrum scaling**  
ALICI F. S., SUCUOĞLU H.  
16th European Conference on Earthquake Engineering, Thessaloniki, Greece, 18 - 21 June 2018
- XI. **Earthquake Resilience: Performance-based seismic design of concrete structures**  
SUCUOĞLU H.  
Innovation in Precast Summit, 26 - 27 November 2017
- XII. **INVESTIGATION OF OVERSTRENGTH IN ASYMMETRIC-PLAN STRUCTURES AS AN OPTIMUM DESIGN STRATEGY**  
KAATSIZ K., SUCUOĞLU H.  
4. Uluslararası Deprem Mühendisliği ve Sismoloji Konferansı, Ankara, Turkey, 11 - 13 October 2017
- XIII. **Sismik Girdi Enerjisi Tahmini: Tahmin Denklemleri ve Hız Spektrumu Ölçeklendirmesi**  
ALICI F. S., SUCUOĞLU H.  
4. Uluslararası Deprem Mühendisliği ve Sismoloji Konferansı, 11 - 13 October 2017
- XIV. **Application of Performance Based Seismic Design to Tall buildings Located in high Seismic Region**  
BUDAK E., SUCUOĞLU H.  
XVII International Scientific Conference- VSU 2017 Sofia, 8 - 09 June 2017
- XV. **Safety of Airport Structures Against Blast Attack**  
SUCUOĞLU H.  
The 7th Jordanian International Civil Engineering Conference (JICEC) Amman, Jordan, Amman, Jordan, 10 - 12 May 2017
- XVI. **Performance Based Seismic Design of Reinforced Concrete Tall Buildings**  
BUDAK E., SUCUOĞLU H.  
16th World Conference on Earthquake Engineering (Chile-16WCEE), 9 - 13 January 2017
- XVII. **PREDICTION OF INPUT ENERGY SPECTRUM: ATTENUATION MODELS AND VELOCITY SPECTRUM SCALING**  
ALICI F. S., SUCUOĞLU H.  
16th World Conference on Earthquake Engineering, 9 - 13 January 2017
- XVIII. **GENERALIZED PUSHOVER ANALYSIS FOR TORSIONALLY COUPLED SYSTEMS**

KAATSIZ K., ALICI F. S., SUCUOĞLU H.

16th World Conference on Earthquake Engineering, Santiago, Chile, 9 - 13 January 2017

- XIX. **BİNA YAPILARININ ÇOK MODLU İTME ANALİZİ İÇİN GENEL YÜK VEKTÖRLERİNİN PRATİK UYGULAMASI**  
ALICI F. S., SUCUOĞLU H.  
3. TÜRKİYE DEPREM MÜHENDİSLİĞİ VE SİSMOLOJİ KONFERANSI, İzmir, Turkey, 14 - 16 October 2015
- XX. **BURULMALI SİSTEMLER İÇİN GENEL YÜK VEKTÖRLERİ İLE ÇOK MODLU İTME ANALİZİ**  
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3. TÜRKİYE DEPREM MÜHENDİSLİĞİ VE SİSMOLOJİ KONFERANSI, İzmir, Turkey, 14 - 16 October 2015
- XXI. **Practical implementation of generalized pushover analysis for multimodal pushover analysis**  
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- XXII. **Generalized force vectors for analysis of torsionally coupled systems**  
KAATSIZ K., SUCUOĞLU H.  
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- XXIII. **Fundamental Concepts of Performance Based Earthquake Engineering**  
SUCUOĞLU H.  
2015 World Congress on Advances in Structural Engineering and Mechanics, 25 - 29 August 2015
- XXIV. **Detrimental Role of Masonary Infills on the Seismic Performance of Residential Buildings**  
SUCUOĞLU H.  
Second International Workshop on Seismic Performance of Non-Structural Elements, Pavia, Italy, 13 May 2015
- XXV. **Performance Based Procedures in the Assessment and Retrofitting of Existing Structures**  
SUCUOĞLU H.  
The Sixth Jordanian International Civil Engineering Conference, Amman, Jordan, 10 - 12 March 2015, pp.21-22
- XXVI. **Performance assessment of RC frames with HCT brick infill walls rehabilitated with MRM by using pseudo dynamic test protocols**  
Ezzatfar P., BİNİCİ B., KURÇ Ö., CANBAY E., Sucuoğlu H., Özcebe G.  
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- XXVII. **Dokuz Katlı Tünel Kalıp Bina Sonlu Eleman Modelinin Zorlamalı Titreşim Test Verileri ile Güncellenmesi**  
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- XXXIII. **In defence of Zeytinburnu**  
Ozcebe G., SUCUOĞLU H., YÜCEMEN M. S., YAKUT A.  
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- XXXIV. **Influence of ground motion intensity on the performance of low- and mid-rise ordinary concrete buildings**  
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- XXXV. **Forced Vibration Testing of Reinforced Concrete Buildings**  
Çelik O. C., Sucuoğlu H., Akyüz U.  
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- XXXVI. **Peak ground velocity sensitive deformation demands and a rapid damage assessment approach**  
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- XXXVII. **Simple survey procedures for seismic risk assessment in urban building stocks**  
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- XXXVIII. **Influence of peak ground velocity on seismic failure probability**  
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4th European Conference on Structural Dynamics (EURODYN 99), PRAGUE, Czech Republic, 7 - 10 June 1999, pp.1031-1036
- XXXIX. **Seismic behavior of nonstructural components Window glass panels**  
SUCUOĞLU H., Vallabhan G.  
7th International Conference on Soil Dynamics and Earthquake Engineering, Girit, Greece, 15 - 17 May 1995, pp.591-598
- XL. **EARTHQUAKE VULNERABILITY LOSS AND RISK ASSESSMENT IN TURKEY**  
GÜLKAN H. P., SUCUOĞLU H., Ergünay O.  
THE TENTH WORLD CONFERENCE ON EARTHQUAKE ENGINEERING, 19 - 24 July 1992, pp.539-543
- XLI. **ANALYSIS OF A BURIED DOME UNDER BLAST AND GRAVITY LOADS**  
SUCUOĞLU H., GÜLKAN H. P.  
2ND INTERNATIONAL CONF ON STRUCTURES UNDER SHOCK AND IMPACT, 16 - 18 June 1992, pp.601-612

## Supported Projects

SUCUOĞLU H., Other International Funding Programs, Masters in Earthquake Engineering and Engineering Seismology, 2015 - 2019  
SUCUOĞLU H., TUBITAK Project, YIĞMA DOLGU DUVARLI BETONARME ÇERÇEVELERİN DAVRANIŞ BÜTÜNLÜĞÜ İÇİN BİR BAĞ SİSTEMİ, 2013 - 2015

## Contractual Researches

SUCUOĞLU H., UNIFREE, 2018 - 2019

SUCUOĞLU H., UNIFREE DUTY A.Ş. PROJE, 2016 - 2017

SUCUOĞLU H., ENERJİ-SA PROJESİ, 2013 - 2013

SUCUOĞLU H., Star Rafineri AŞ Projesi, 2012 - 2012

SUCUOĞLU H., ENERJİSA DANIŞMANLIK, 2012 - 2012

SUCUOĞLU H., Riskli Binaların Hızlı Değerlendirme Yöntemleri ile Belirleme Formunun Gelistirilmesi ve Pilot Uygulaması  
İş Danışmanlık Hizmetleri , 2009 - 2009

SUCUOĞLU H., Evaluation of projects of facilities for electricity power generation, 2009 - 2009

SUCUOĞLU H., TC Milli Eğitim Bakanlığı OKullarında Yeni Deprem Yönetmeliğine Uygun Hesap ve Detayların  
Geliştirilmesi, 2007 - 2007

## Activities in Scientific Journals

Earthquakes and Structures, Committee Member, 2012 - Continues

Earthquake Spectra, Committee Member, 2010 - Continues

Journal Of Earthquake Engineering, Committee Member, 2001 - Continues

## Metrics

Publication: 122

Citation (WoS): 997

Citation (Scopus): 965

H-Index (WoS): 18

H-Index (Scopus): 15

## Invited Talks

New Improvements in the 2018 Turkish Seismic Code, Conference, CEB-FIP, Turkey, November 2018

## Awards

Sucuoğlu H., Bilim Ödülü, Parlar Eğitim Ve Araştırma Vakfı, December 2012

## Non Academic Experience

METU

METU