

# Prof. ÖZGÜR KURÇ

## Personal Information

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## International Researcher IDs

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Publons / Web Of Science ResearcherID: AAZ-9948-2020

ScopusID: 8903168700

Yoksis Researcher ID: 164121

## Education Information

Doctorate, Georgia Institute of Technology, United States Of America 1999 - 2005

Postgraduate, Middle East Technical University, Faculty of Engineering, Department of Civil Engineering, Turkey 1997 - 1999

Undergraduate, Middle East Technical University, Faculty of Engineering, Department of Civil Engineering, Turkey 1993 - 1997

## Foreign Languages

English, C1 Advanced

## Dissertations

Doctorate, A Substructure Based Parallel Solution Framework for Solving Linear Structural Systems with Multiple Loading Conditions, Georgia Institute Of Technology, 2005

Postgraduate, A finite element based plate/shell macro element, Middle East Technical University, Faculty of Engineering, Department of Civil Engineering, 1999

## Research Areas

Structure

## Academic Titles / Tasks

Professor, Middle East Technical University, Faculty of Engineering, Department of Civil Engineering, 2018 - Continues

## Advising Theses

KURÇ Ö., Comparative study of Turkish Earthquake Code 2007 and Turkish Building Earthquake Code 2018,

Postgraduate, I.ASGAROV(Student), 2022  
KURÇ Ö., Simulation of 2-D flows over stationary and moving boundaries by discrete vortex method, Doctorate, G.KARIMIZINDASHTI(Student), 2022  
KURÇ Ö., Comparative study on explicit integration algorithms for structural dynamics, Postgraduate, D.ÇAKIR(Student), 2022  
KURÇ Ö., A comparative study on practical modeling of steel igerder bridges considering restrained warping behavior, Postgraduate, A.Şeyma(Student), 2020  
Kurç Ö., Yaman İ. Ö., EXPERIMENTAL AND NUMERICAL INVESTIGATION OF SHRINKAGE MECHANISM OF PLAIN AND REINFORCED CONCRETE MEMBERS, Doctorate, U.ALBOSTAN(Student), 2020  
KURÇ Ö., Finite element analysis of a deep excavation: a case study, Postgraduate, R.Deniz(Student), 2019  
KURÇ Ö., SUCUOĞLU H., A comparative study on nonlinear modeling of structural walls, Postgraduate, S.EREN(Student), 2018  
KURÇ Ö., Experimental investigation of turbulent flow and wind comfort characteristics of fractal wind fences, Postgraduate, Ş.ÇOŞKUN(Student), 2017  
KURÇ Ö., Implicit monolithic parallel solution algorithm for seismic analysis of dam-reservoir systems, Doctorate, S.Özmen(Student), 2016  
KURÇ Ö., IMPLICIT MONOLITHIC PARALLEL SOLUTION ALGORITHM FOR SEISMIC ANALYSIS OF DAM-RESERVOIR SYSTEMS, Doctorate, S.ÖZMEN(Student), 2016  
KURÇ Ö., A Computer vision based method for semi-automated rebar detection and measurement of reinforced concrete columns /, Postgraduate, M.Usman(Student), 2014  
KURÇ Ö., A computer vision based method for semi-automated rebar detection and measurement of reinforced concrete columns, Postgraduate, M.USMAN(Student), 2014  
KURÇ Ö., Design of a web based interface and database structure for structural engineering experimental data /, Postgraduate, T.Kurt(Student), 2014  
KURÇ Ö., Design of a web based interface and database structure for structural engineering experiment data, Postgraduate, T.KURT(Student), 2014  
KURÇ Ö., Implementation of coupled thermal and structural analysis methods for reinforced concrete structures, Postgraduate, U.ALBOSTAN(Student), 2013  
KURÇ Ö., POLAT M. U., Nonlinear analysis of reinforced concrete frame structures, Postgraduate, G.KORAY(Student), 2013  
KURÇ Ö., A METHODOLOGY FOR REAL-TIME SENSOR-BASED BLOCKAGE ASSESSMENT OF BUILDING STRUCTURES DURING EARTHQUAKES, Postgraduate, T.ERGİN(Student), 2013  
KURÇ Ö., Solution of sparse systems on GPU architecture, Postgraduate, A.LÜLEÇ(Student), 2011  
KURÇ Ö., Investigation of wind effects on tall buildings through wind tunnel testing, Postgraduate, B.KAYIŞOĞLU(Student), 2011  
ÇETİN K. Ö., KURÇ Ö., Parallel solution of soil-structure interaction problems on PC clusters, Postgraduate, T.BAĞÇECİOĞLU(Student), 2011  
KURÇ Ö., UZOL O., Experimental and numerical investigation of the wind effects on long span bridge decks, Postgraduate, I.ASHTIANI(Student), 2011  
KURÇ Ö., A web-based database for experimental structural engineering research, Postgraduate, Ö.UMUT(Student), 2010  
KURÇ Ö., A web based multi user framework for the design and detailing of reinforced concrete frames - beams, Postgraduate, E.BURAK(Student), 2009  
KURÇ Ö., Linear static analysis of large structural models on PC clusters, Postgraduate, S.ÖZMEN(Student), 2009  
KURÇ Ö., A web based multi-user framework for the design and detailing of reinforced concrete frames-columns, Postgraduate, G.ÜNAL(Student), 2009

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

- I. Flow past rotating cylinders using deterministic vortex method**  
Karimi-Zindashti G., KURÇ Ö.

Ocean Engineering, vol.291, 2024 (SCI-Expanded)

- II. **A Wireless Metamaterial-Inspired Passive Rotation Sensor With Submilliradian Resolution**  
Gargari A. M., Ozbey B., DEMİR H. V., ALTINTAŞ A., Albostan U., KURÇ Ö., ERTÜRK V. B.  
IEEE SENSORS JOURNAL, vol.18, no.11, pp.4482-4490, 2018 (SCI-Expanded)
- III. **Experimental investigation of wake flow field and wind comfort characteristics of fractal wind fences**  
Coskun S., Hazaveh H. A., UZOL O., KURÇ Ö.  
JOURNAL OF WIND ENGINEERING AND INDUSTRIAL AERODYNAMICS, vol.168, pp.32-47, 2017 (SCI-Expanded)
- IV. **Multi-Point Single-Antenna Sensing Enabled by Wireless Nested Split-Ring Resonator Sensors**  
Ozbey B., ERTÜRK V. B., KURÇ Ö., ALTINTAŞ A., DEMİR H. V.  
IEEE SENSORS JOURNAL, vol.16, no.21, pp.7744-7752, 2016 (SCI-Expanded)
- V. **Building-Information-Modeling-Based Earthquake Damage Assessment for Reinforced Concrete Walls**  
Anil E. B., Akinci B., KURÇ Ö., Garrett J. H.  
JOURNAL OF COMPUTING IN CIVIL ENGINEERING, vol.30, no.4, 2016 (SCI-Expanded)
- VI. **A Wireless Passive Sensing System for Displacement/Strain Measurement in Reinforced Concrete Members**  
Ozbey B., ERTÜRK V. B., DEMİR H. V., ALTINTAŞ A., KURÇ Ö.  
SENSORS, vol.16, no.4, 2016 (SCI-Expanded)
- VII. **Finite Element Modeling of a Reinforced Concrete Frame with Masonry Infill and Mesh Reinforced Mortar Subjected to Earthquake Loading**  
Redmond L., Ezzatfar P., DesRoches R., Stavridis A., Ozcebe G., KURÇ Ö.  
EARTHQUAKE SPECTRA, vol.32, no.1, pp.393-414, 2016 (SCI-Expanded)
- VIII. **Information requirements for earthquake damage assessment of structural walls**  
Anil E. B., Akinci B., Garrett J. H., KURÇ Ö.  
ADVANCED ENGINEERING INFORMATICS, vol.30, no.1, pp.54-64, 2016 (SCI-Expanded)
- IX. **Wireless Sensing in Complex Electromagnetic Media: Construction Materials and Structural Monitoring**  
Ozbey B., DEMİR H. V., KURÇ Ö., ERTÜRK V. B., ALTINTAŞ A.  
IEEE SENSORS JOURNAL, vol.15, no.10, pp.5545-5554, 2015 (SCI-Expanded)
- X. **Pseudo-dynamic testing of a concrete gravity dam**  
Aldemir A., BİNİCİ B., ARICI Y., KURÇ Ö., CANBAY E.  
EARTHQUAKE ENGINEERING & STRUCTURAL DYNAMICS, vol.44, no.11, pp.1747-1763, 2015 (SCI-Expanded)
- XI. **Blockage assessment of buildings during emergency using multiple types of sensors**  
Ergen Pehlevan E., Guven G., KURÇ Ö., ERBERİK M. A., Ergin T., BİRGÖNÜL M. T., Akinci B.  
AUTOMATION IN CONSTRUCTION, vol.49, pp.71-82, 2015 (SCI-Expanded)
- XII. **Wireless Measurement of Elastic and Plastic Deformation by a Metamaterial-Based Sensor**  
Ozbey B., DEMİR H. V., KURÇ Ö., ERTÜRK V. B., ALTINTAŞ A.  
SENSORS, vol.14, no.10, pp.19609-19621, 2014 (SCI-Expanded)
- XIII. **Atmospheric boundary layer simulation in a short wind tunnel**  
Shojaee S. M. N., UZOL O., KURÇ Ö.  
INTERNATIONAL JOURNAL OF ENVIRONMENTAL SCIENCE AND TECHNOLOGY, vol.11, no.1, pp.59-68, 2014 (SCI-Expanded)
- XIV. **Wireless Displacement Sensing Enabled by Metamaterial Probes for Remote Structural Health Monitoring**  
Ozbey B., Unal E., Ertugrul H., KURÇ Ö., Puttlitz C. M., ERTÜRK V. B., ALTINTAŞ A., DEMİR H. V.  
SENSORS, vol.14, no.1, pp.1691-1704, 2014 (SCI-Expanded)
- XV. **A comparative study on different analysis approaches for estimating the axial loads on columns and structural walls at tall buildings**  
KURÇ Ö., Lulec A.  
STRUCTURAL DESIGN OF TALL AND SPECIAL BUILDINGS, vol.22, no.6, pp.485-499, 2013 (SCI-Expanded)
- XVI. **Pseudo dynamic test of a deficient reinforced concrete frame upgraded with internal steel frames**

- ÖZÇELİK R., BİNİCİ B., KURÇ Ö.  
EARTHQUAKE ENGINEERING & STRUCTURAL DYNAMICS, vol.42, no.5, pp.763-778, 2013 (SCI-Expanded)
- XVII. **Investigation of Wind Effects on Tall Buildings through Wind Tunnel Testing**  
KURÇ Ö., Kayisoglu B., Shojaee S. M. N., UZOL O.  
TEKNIK DERGI, vol.23, no.4, pp.6163-6186, 2012 (SCI-Expanded)
- XVIII. **Information Requirements for Design and Detailing of Reinforced Concrete Frames in Multiuser Environments**  
Anil E. B., Unal G., KURÇ Ö.  
JOURNAL OF COMPUTING IN CIVIL ENGINEERING, vol.26, no.4, pp.465-477, 2012 (SCI-Expanded)
- XIX. **Performance Examination of Two Seismic Strengthening Procedures by Pseudodynamic Testing**  
Kurt E. G., KURÇ Ö., BİNİCİ B., CANBAY E., Ozcebe G.  
JOURNAL OF STRUCTURAL ENGINEERING-ASCE, vol.138, no.1, pp.31-41, 2012 (SCI-Expanded)
- XX. **Pseudo Dynamic Testing of an RC Frame Retrofitted with Chevron Braces**  
ÖZÇELİK R., BİNİCİ B., KURÇ Ö.  
JOURNAL OF EARTHQUAKE ENGINEERING, vol.16, no.4, pp.515-539, 2012 (SCI-Expanded)
- XXI. **Optimum design of high-rise steel buildings using an evolution strategy integrated parallel algorithm**  
Hasançebi O., Bahcecioglu T., Kurç Ö., Saka M. P.  
COMPUTERS & STRUCTURES, vol.89, pp.2037-2051, 2011 (SCI-Expanded)
- XXII. **Seismic Performance of a Deficient Reinforced Concrete Test Frame with Infill Walls**  
Kurt E. G., BİNİCİ B., KURÇ Ö., CANBAY E., Akpinar A., Ozcebe G.  
EARTHQUAKE SPECTRA, vol.27, no.3, pp.817-834, 2011 (SCI-Expanded)
- XXIII. **A Comparative Study on Structural Wall Design Approach of 2007 Turkish Seismic Code**  
KURÇ Ö., Kayisoglu B., Lulec A., Ozcebe G.  
TEKNIK DERGI, vol.22, no.3, pp.5487-5508, 2011 (SCI-Expanded)
- XXIV. **Workload Distribution Framework for the Parallel Solution of Large Structural Models on Heterogeneous PC Clusters**  
KURÇ Ö.  
JOURNAL OF COMPUTING IN CIVIL ENGINEERING, vol.24, no.2, pp.151-160, 2010 (SCI-Expanded)
- XXV. **A New Era in Structural Analysis: Construction Staging**  
Karakaplan A., CANER A., Kurc Ö., Domanic A., Lulec A.  
TEKNIK DERGI, vol.20, no.4, pp.4905-4917, 2009 (SCI-Expanded)
- XXVI. **An Efficient Parallel Solution Framework for the Linear Solution of Large Systems on PC Clusters**  
KURÇ Ö., Ozmen S.  
Tsinghua Science and Technology, vol.13, pp.65-70, 2008 (SCI-Expanded)
- XXVII. **An iterative parallel workload balancing framework for direct condensation of substructures**  
KURÇ Ö., Will K.  
COMPUTER METHODS IN APPLIED MECHANICS AND ENGINEERING, vol.196, pp.2084-2096, 2007 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Rail-structure interaction and vehicle-track-structure interaction level 1 and 2 analyses**  
Fedorova M., Sivaselvan M., KURÇ Ö., Karakaplan A.  
Bridge Structures, vol.19, no.3, pp.91-101, 2023 (ESCI)

## Books & Book Chapters

- I. **Turkish Solar Radiation Zones for Segmental Box Girder Bridge Design Under Temperature Gradient Loading**  
Yılmaz İ., ALBOSTAN U., CANER A., KURÇ Ö.

in: Developments in International Bridge Engineering, Alp Caner, Polat Gülkan, Khaled Mahmoud, Editor, Springer International Publishing, pp.77-89, 2016

II. **Application of Mesh Reinforced Mortar for Performance Enhancement of Hollow Clay Tile Infill walls**  
EZZATFAR P., BİNİCİ B., KURÇ Ö., CANBAY E., SUCUOĞLU H., ÖZCEBE G.

in: Seismic Evaluation and Rehabilitation of Structures, İlki Alper, Fardis Michael, Editor, Springer, pp.171-186, 2014

III. **Qualification of Large Testing Facilities in Earthquake Engineering**

KURÇ Ö., SUCUOĞLU H., Marco M., Gabriele Z.

in: Role of Seismic Testing Facilities in Performance Based Earthquake Engineering, Fardis, Michael N, Rakicevic, Zoran, Editor, Springer, pp.287-303, 2012

## **Refereed Congress / Symposium Publications in Proceedings**

I. **Wireless Monitoring of a Structural Beam To Be Used for Post-Earthquake Damage Assessment**

Ozbey B., Kurc O., Demir H. V., Erturk V. B., Altintas A.

2nd URSI Atlantic Radio Science Meeting (AT-RASC), Meloneras, Spain, 28 May - 01 June 2018

II. **Nonlinear Seismic Dam and Foundation Analysis Using Explicit Newmark Integration Method with Static Condensation**

Albostan U., Bahcecioglu T., ARICI Y., KURÇ Ö.

10th International Conference on Structural Dynamics (EURODYN), Rome, Italy, 10 - 13 September 2017, vol.199, pp.316-321

III. **A Novel Wireless Metamaterial-Inspired Rotation Sensor**

Ali G., ERTÜRK V. B., KURÇ Ö., ALTINTAŞ A., DEMİR H. V.

2017 IEEE AP-S Symposium on Antennas and Propagation and USNC-URSI Radio Science Meeting, 9 - 14 July 2017

IV. **An Electromagnetic Sensing System Incorporating Multiple Probes and Single Antenna for Wireless Structural Health Monitoring**

Ozbey B., ALTINTAŞ A., DEMİR H. V., ERTÜRK V. B., KURÇ Ö.

11th European Conference on Antennas and Propagation (EUCAP), Paris, France, 19 - 24 March 2017

V. **Application of 2D Digital Image Correlation Three Point Flexure Test of Reinforced Concrete Beam**  
ALBOSTAN U., KURÇ Ö.

Application of 2D Digital Image Correlation: Three Point Flexure Test of Reinforced Concrete Beam, 21 - 23 September 2016

VI. **Development of a software suite for the structural analysis and design of concrete gravity dams**

Altuğ A., ARICI Y., BİNİCİ B., KURÇ Ö.

ICOLD 25th Congress/ICOLD 83rd Annual Meeting Symposium Hydropower' 15, 13 - 20 June 2015

VII. **A Cloud Based Workflow for a Finite Element Analysis Preprocessor**

KURT T., ARICI Y., KURÇ Ö.

Fourth International Conference on Parallel, Distributed, Grid and Cloud Computing for Engineering, 24 - 27 March 2015

VIII. **RF Displacement and Strain Sensing System for Wireless Structural Health Monitoring**

Ozbey B., KURÇ Ö., DEMİR H. V., ERTÜRK V. B., ALTINTAŞ A.

USNC-URSI Radio Science Meeting (Joint with AP-S Symposium) Proceedings, Vancouver, Canada, 19 July 2015, pp.214

IX. **Turkish Solar Radiation Zones for Segmental Box Girder Bridge Design Under Temperature Gradient Loading**

YILMAZ A., Albostan U., CANER A., KURÇ Ö.

Istanbul Bridge Conference, Turkey, 11 - 13 August 2014, vol.9, pp.77-89

X. **Pseudo dynamic test results of a concrete gravity dam**

Aldemir A., BİNİCİ B., CANBAY E., KURÇ Ö., ARICI Y.

10th U.S. National Conference on Earthquake Engineering: Frontiers of Earthquake Engineering, NCEE 2014,

Alaska, United States Of America, 21 - 25 July 2014

- XI. **Representation of damage information for post-earthquake damage assessment of reinforced concrete frames**  
Anil E. B., Akıncı B., Garrett J., KURÇ Ö.  
2013 ASCE International Workshop on Computing in Civil Engineering, 23 - 25 June 2013
- XII. **Characterization of laser scanners for detecting cracks for post-earthquake damage inspection**  
Anil E. B., Akıncı B., Garrett J. H., KURÇ Ö.  
30th International Symposium on Automation and Robotics in Construction and Mining, ISARC 2013, Held in Conjunction with the 23rd World Mining Congress, Montreal, Canada, 11 - 15 August 2013, pp.313-320
- XIII. **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.  
5th International Conference on Advances in Experimental Structural Engineering, AESE 2013, Taipei, Taiwan, 8 - 09 November 2013
- XIV. **Multisensor data fusion for determining hallway blockages in a building during evacuation**  
Güven G., Ergen E., Ozbas B., Erberik M. A., Kurc Ö., BİRGÖNÜL M. T.  
2013 ASCE International Workshop on Computing in Civil Engineering, IWCCE 2013, Los Angeles, CA, United States Of America, 23 - 25 June 2013, pp.717-724
- XV. **Post disaster sensor based condition assessment of buildings to develop evacuation strategies**  
Ergin T., Balta S., ERBERİK M. A., KURÇ Ö., ERGEN PEHLEVAN E., BİRGÖNÜL M. T.  
Fourteenth International Conference on Computing in Civil and Building Engineering, 27 - 29 January 2012
- XVI. **Providing guidance for evacuation during emergency based on a real time damage and vulnerability assessment of facilities**  
GÜVEN İŞİN G., ERGEN PEHLEVAN E., ERBERİK M. A., KURÇ Ö., BİRGÖNÜL M. T.  
ASCE International Conference on Computing in Civil Engineering, 17 - 20 June 2012
- XVII. **Comparisons of different retrofit techniques with pseudo dynamic testing**  
Özcebe G., BİNİCİ B., KURÇ Ö., KURT E., CANBAY E.  
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.2, pp.1371-1380
- XVIII. **Qualification of Large Testing Facilities in Earthquake Engineering Research**  
KURÇ Ö., SUCUOĞLU H., Molinari M., Zanon G.  
Workshop on the Role of Research Infrastructures in Performance-Based Earthquake Engineering, Ohrid, Macedonia, 2 - 03 September 2010, vol.22, pp.287-303
- XIX. **Performance comparisons of seismic assessment methods with PSD test results of a deficient RC frame**  
Özcebe G., KURT E., BİNİCİ B., KURÇ Ö., CANBAY E., Akpınar U.  
2009 ATC and SEI Conference on Improving the Seismic Performance of Existing Buildings and Other Structures, San Francisco, CA, United States Of America, 9 - 11 December 2009, pp.319-330
- XX. **Optimum design of high-rise steel buildings using an evolution strategy integrated parallel algorithm**  
HASANÇEBİ O., Bahçecioğlu T., KURÇ Ö., Saka M.  
12th International Conference on Civil, Structural and Environmental Engineering Computing, CC 2009, Funchal, Portugal, 1 - 04 September 2009
- XXI. **The St. Regis hotel and residence (Atlanta, GA) - Analysis, design, and construction**  
Watson N. A., KURÇ Ö., Luangvilai K., Celik O., Ocon M. R.  
2009 Structures Congress - Don't Mess with Structural Engineers: Expanding Our Role, Austin, TX, United States Of America, 30 April - 02 May 2009, pp.2328-2336
- XXII. **A Comparative Study on Two Different Direct Parallel Solution Strategies for Large-Scale Problems**  
Bahçecioğlu T., Özmen S., KURÇ Ö.  
1st International Conference on Parallel, Distributed and Grid Computing for Engineering, Pecs, Hungary, 6 - 08 April 2009, pp.568-580
- XXIII. **Parallel linear solution of large structures on heterogeneous PC clusters**

KURÇ Ö., Will K.

5th International Conference on Engineering Computational Technology, ECT 2006, Las Palmas de Gran Canaria, Spain, 12 - 15 September 2006

**XXIV. A substructure based parallel linear solution framework for structural systems having multiple loading cases**

Kurc Ö., Will K.

2005 ASCE International Conference on Computing in Civil Engineering, Cancun, Mexico, 12 - 15 July 2005, pp.765-775

## **Supported Projects**

KURÇ Ö., ALBOSTAN U., Project Supported by Higher Education Institutions, 2 Boyutlu Beton Elemanların Büzüşme Birim Yer Değiştirme Ölçümü için Görüntü Korelasyon Yönteminin Hassasiyetinin Sınanması, 2017 - Continues

KURÇ Ö., ALBOSTAN U., Project Supported by Higher Education Institutions, Birim Yerdeğiştirme Ölçümü için Görüntü Korelasyon Yönteminin Hassasiyetinin Sınanması, 2015 - 2015

KURÇ Ö., Project Supported by Higher Education Institutions, Yüksek Binalarda Rüzgar Etkilerinin İncelenmesi, 2009 - 2011

## **Metrics**

Publication: 55

Citation (WoS): 270

Citation (Scopus): 431

H-Index (WoS): 10

H-Index (Scopus): 13

## **Non Academic Experience**

METU

METU

BLA Associates, Atlanta

Georgia Institute of Technology

METU