

## UGURHAN AKYUZ

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### POSITION

Professor  
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### EDUCATION

Middle East Technical University, Department of Civil Engineering, B.Sc., 1990  
Middle East Technical University, Department of Civil Engineering, M.Sc., 1992  
Middle East Technical University, Department of Civil Engineering, Ph.D, 1998

### ACADEMIC HISTORY

1990 - 1998	Research Assistant	Middle East Technical University, Department of Civil Engineering, Turkey
1997 - 1998	Instructor	Indiana University Purdue University Indianapolis, USA
2002 (3 months)	Visiting Professor	University of Texas, Austin, Texas, USA
1998 - 2005	Assitant Professor	Middle East Technical University, Department of Civil Engineering, Turkey
2005 - 2010	Associate Professor	Middle East Technical University, Department of Civil Engineering, Turkey
2010 - present	Professor	Middle East Technical University, Department of Civil Engineering, Turkey

### HONORS/KEYNOTE AND GUEST LECTURES/STATE-OF-THE-ART PRESENTATIONS

Teaching and Research Assistantship from Indiana University Purdue University at Indianapolis (IUPUI), USA (1997).  
Teaching and Research Assistantship from Middle East Technical University, Turkey (1990-1998).  
Scholarship from Turkish Scientific and Technical Research Council, Turkey, (1991-1996).  
Scholarship of NATO from Turkish Scientific and Technical Research Council, Turkey, (1997).

### PUBLICATIONS

#### International Journal Papers:

- O.C. Celik, H. Sucuoglu, U. Akyuz, "Forced Vibration Testing and Finite Element Modeling of a Nine-Story Reinforced Concrete Flat Plate-Wall Building", *Earthquake Spectra*, **31**, 1069-1081, 2015.
- A. K. Naghshineh, U. Akyuz, and A. Caner, "Lateral response comparison of unbonded elastomeric bearings reinforced with carbon fiber mesh and steel", *Shock and Vibration*, Article ID 208045, 2015.
- A. K. Naghshineh, U. Akyuz, and A. Caner, "Comparison of Fundamental Properties of New Types of Fiber Mesh Reinforced Seismic Isolators with Conventional Isolators", *Earthquake Engineering and Structural Dynamics*, **43**, 301-316, 2014.
- Y.D.A. Erdem, U. Akyuz, A. Turer, B. Erdil, and N.S. Guchan, "Seismic Resistance Evaluation of Traditional Ottoman Timber-Frame Himiş Houses: Frame Loadings and Material Tests", *Earthquake Spectra*, **30**, 1711-1732, 2014.
- B. Erdil, U. Akyuz, and I.O. Yaman, "CFRP-Confined Concrete Columns Under Different Environmental Effects", *Magazine of Concrete Research*, **65**, 731-743, 2013
- G. Ozdemir, and U. Akyuz, "Dynamic Analyses of Isolated Structures under Bi-directional Excitations of Near-field Ground Motions", *Shock and Vibration*, **19**, 505-513, (2012).
- B. Erdil, U. Akyuz, and I.O. Yaman, "Mechanical Behavior of CFRP Confined Low and Medium Strength Concrete Subjected to Simultaneous Heating-Cooling Cycles and Sustained Loading", *Materials and Structures*, (accepted for publication).
- C. Ozkaya, U. Akyuz, A. Caner, M. Dicleli, and S. Pınarbasi, "Development of a new rubber seismic isolator 'Ball Rubber Bearing'", *Earthquake Engineering and Structural Dynamics*, (2011).
- I. Erdem, U. Akyuz, "Analytical Investigation of Lateral Strength of Masonry infilled RC Frames Retrofitted with CFRP", *ASCE's Journal of Performance of Constructed Facilities*, **24**, 302-310, (2010).
- Y.D. A. Erdem, A. Turer, B. Erdil, U. Akyuz, and N.S. Guchan, "Testing and Seismic Capacity Evaluation of a Typical Traditional Ottoman Timber Frame", *Advanced Materials Research*, **133-134**, 629-634, (2010).
- C. Soyarslan, A. E. Tekkaya, and U. Akyuz, "Application of Continuum Damage Mechanics in discontinuous crack formation: Forward extrusion chevron predictions", *Journal of Applied Mathematics and Mechanics / Zeitschrift für Angewandte Mathematik und Mechanik*, **88**, 436-453, (2008).
- S. Pınarbasi, Y. Mengi, and U. Akyuz, "Compression of solid and annular circular discs bonded to rigid surfaces", *International Journal Solids and Structures*, **45**, 4543-4561, (2008).
- S. Pınarbasi, U. Akyuz, and Y. Mengi, "A New Formulation for the Analysis of Elastic Layers Bonded to Rigid Surfaces", *International Journal Solids and Structures*, **43**, 4271-4296, (2006).
- I. Erdem, U. Akyuz, U. Ersoy and G. Ozcebe, "An experimental study on two different strengthening techniques for RC frames", *Engineering Structures*, **28**, 1843-1851, (2006).
- Akyuz, U., "Strengthening of RC Beams with FRPs", *Retrofitting of Concrete Structures by Externally Bonded FRP*, ed. M.N. Fardis, *fib Bulletin*, **35**, 41-51, (2006).
- U. Akyuz, "Separation at the Interface of Nonlinearly Elastic Spinning Tube-Rigid Shaft Subjected to Circumferential Shear", *International Journal of Non-Linear Mechanics*, **39**, 1333-1341, (2004).

- Akyuz, U. ve A. Ertepinar, “Stability and Breathing Motions of Pressurized Compressible Hyperelastic Spherical Shells”, *Journal of Sound and Vibration*, 247, 293-304, (2001).
- Pidaparti R.M., U. Akyuz, P.A. Naick ve D.B. Burr, “Fatigue data analysis of canine femurs under four-point bending”, *Bio-Medical Materials and Engineering*, 10, 43-50, (2000).
- Akyuz, U. ve A. Ertepinar, “Stability and Asymmetric Vibrations of Pressurized Compressible Hyperelastic Cylindrical Shells”, *International Journal of Non-Linear Mechanics*, 34, 391-404, (1999).
- Chen, J., U. Akyuz, L. Xu, ve R.M.V. Pidaparti, “Stress Analysis of the Human Temporomandibular Joint”, *Medical Engineering and Physics*, 20, 565-572, (1998).
- Akyuz, U. ve A. Ertepinar, “Breathing Motions and Loss of Stability of Pre-stressed Compressible Hyperelastic Cylindrical Shells”, *International Journal of Engineering Science*, 35, 1265-1275, (1997).

National Journal Paper:

- Pinarbasi, S. ve Akyuz, U., “Sismik İzolasyon ve Elastomerik Yastık Deneyleri”, *TMMOB İnşaat Mühendisleri Odası Teknik Dergi*, Cilt 16, Sayı 3, 3581-3598, 2005.

International Proceedings:

- Y.D.E. Aktas, U. Akyuz, A. Turer, B. Erdil, and N.S. Guchan, “Behavior of traditional timber frames under reverse-cyclic loading”, *Proceedings of the 10th Pacific Conference on Earthquake Engineering*, Sydney, Australia, 2015.
- G. Ozdemir, and U. Akyuz, “Amplification in the Response of LRB Isolated Structures under Bidirectional Excitations due to Lead Core Heating”, *Proceedings of the 10th US National Conference on Earthquake Engineering*, paper ID: 358, Anchorage, USA, 2014.
- B.Erdil, U. Akyuz, and I.O. Yaman, “Confinement Effectiveness of CFRP in Axial Members Under Various Loading Conditions”, *MFMS 2013*, Bangkok, Thailand, 2013.
- B.Erdil, U. Akyuz, and I.O. Yaman, “Behavior of CFRP confined low strength concrete columns under temperature changes”, *11th International Symposium on Fiber Reinforced Polymer for Reinforced Concrete Structures*, Guimarães, Portugal, 2013.
- G. Ozdemir, and U. Akyuz, “Performance of a Multi-Story Isolated Building Subjected to Bidirectional Excitations in Protection of Critical Equipments from Earthquake Hazard”, *Proceedings of the 15th World Conference on Earthquake Engineering*, paper no: 2390, Lisbon, Portugal, 2012.
- B.Erdil, U. Akyuz, and I.O. Yaman, “A Comparative Study of Force-deflection Relationship of FRP-confined Concrete Columns”, *III ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering*, Corfu, Greece, 2011.
- G. Ozdemir, and U. Akyuz, “Response of Isolated Buildings Under Bi-directional Excitations”, *Proceedings of the World Congress on Advances in Structural Engineering and Mechanics*, paper no:SM130-078, Seoul, South Korea, 2011.
- G. Ozdemir, and U. Akyuz, “Response of Isolated RC Buildings Under Bi-directional Near-fault Ground Motions”, *Proceedings of the 9th US National 10th Canadian Conference on Earthquake Engineering*, paper no:460, Toronto, Canada, 2010.
- N.E. Reyhanogullari, and U. Akyuz, “Vertical Ground Motion Influence on Seismically Isolated & Unisolated Bridges”, *Proceedings of the 9th International Congress on Advances in Civil Engineering*, paper no:SEE-089, Trabzon, Turkey, 2010.
- Y.D.A. Erdem, U. Akyuz, B. Erdil, A. Turer, and N.S. Guchan, “Assessment of seismic behavior of traditional timber frame Ottoman Houses: Frame tests”, *Proceedings of the Structures and Architecture*, pp 1130-1137, Guimaraes, Portugal, 2010.
- G. Ozdemir, and U. Akyuz, “Response of Isolated RC Buildings Under Bi-directional Near-fault Ground Motions”, *Proceedings of the 9th US National 10th Canadian Conference on Earthquake Engineering*, paper no:460, Toronto, Canada, 2010.
- N.E. Reyhanogullari, and U. Akyuz, “Vertical Ground Motion Influence on Seismically Isolated & Unisolated Bridges”, *Proceedings of the 9th International Congress on Advances in Civil Engineering*, paper no:SEE-089, Trabzon, Turkey, 2010.
- B. Erdil, U. Akyuz, I.O. Yaman, “Low Strength Concrete Columns with CFRP: Behavior Under Temperature Changes and Loads”, *CD of the 9th International Symposium on Fiber-Reinforced Polymer Reinforcement for Concrete Structures*, paper no:330, Sydney, Australia, 2009.
- G. Ozdemir, A. Yakut, U. Akyuz, “Comparison of Responses of Existing 5-Story Isolated RC Frame Under Two Different Isolator Models”, *CD of the Sakarya International Symposium on Earthquake Engineering*, paper no: 1402, Sakarya, Turkey, 2009.
- S. Pinarbasi, U. Akyuz, and Y. Mengi, “Effect of Reinforcement Flexibility on Compressive Behavior of Strip-Shaped Elastomeric Bearings”, *8th International Congress on Advances in Civil Engineering*, Famagusta, North Cyprus, 2008.
- S. Pinarbasi, Y. Mengi, and U. Akyuz, “Compressive and Bending Behavior of Strip-shaped Fiber-reinforced Elastomeric Bearings”, *CD of the 14th World Conference on Earthquake Engineering*, paper no: 11-0024, Beijing, China, 2008.
- B. Erdil, U. Akyuz, and I.O. Yaman, “Behavior of CFRP Reinforced Members Under Temperature Changes”, *CD of the 14th World Conference on Earthquake Engineering*, paper no: 12-01-0021, Beijing, China, 2008.
- M.C. Genes, M. Bikce, S. Kacin, U. Akyuz, P. Gulkan, L. Abrahamczyk, J. Schwarz, “Building Monitoring for Seismic Risk Assessment (II): Instrumental Testing of RC Frame Structures and Analytical Reinterpretation of Response Characteristics”, *CD of the 14th World Conference on Earthquake Engineering*, paper no: 09-01-0173, Beijing, China, 2008.
- S. Pinarbasi, U. Akyuz, and G. Ozdemir, “An Experimental Study On Low Temperature Behavior of Elastomeric Bridge Bearings”, *10th World Conference on Seismic Isolation, Energy Dissipation and Active Vibrations Control of Structures*, Istanbul, Turkey, 2007.
- U. Akyuz, and E. Acar, “A Comparative Study for Seismically Isolated Buildings”, *8th Pacific Conference on Earthquake Engineering*, Singapore, 2007.
- U. Akyuz, A. Yakut and M. S. Ozturk, “Effect of Masonry Infill Walls on the Lateral Behavior of Buildings”, *CD of The First European Conference on Earthquake Engineering and Seismology*, Geneva, Switzerland, 2006.
- S. Pinarbasi, U. Akyuz, and Y. Mengi, “Uniform Compression of Bonded Elastic Layers”, *CD of The 4th International Conference on Earthquake Engineering*, paper no: 126, Taipei, Taiwan, 2006.
- S. Pinarbasi, U. Akyuz, “Evaluation of the “Pressure Method” for the Linear Analysis of Elastomeric Bearings”, *CD of the 9th World Seminar on Seismic Isolation, Energy Dissipation and Active Vibration Control of Structures*, Kobe, Japan, 2005.

- S. Pınarbaşı, G. Özdemir and U. Akyuz, “An Experimental Study on Behavior of Low Shape Factor Rubber Bearings Under Large Compressions”, CD of the International Conference on Earthquake Engineering, paper no: E178, Skopje-Ohrid, Macedonia, 2005.
- S. Pınarbaşı and U. Akyuz, “Bending Behavior of Infinite-Strip-Shaped Bonded Elastic Layers”, CD of the International Conference on Earthquake Engineering, paper no: E179, Skopje-Ohrid, Macedonia, 2005.
- G. Özdemir and U. Akyuz, “Tensile Capacities of CFRP Anchors”, ACI Special Publication, Vol. 230, pp 39 - 56, USA, 2005.
- U. Akyuz and A. Ertepinar, “Symmetric and Asymmetric Vibrations of Cylindrical Shells”, CD of The Seventh International Conference on Vibration Problems, Istanbul, Turkey, 2005.
- G. Özcebe, U. Ersoy, T. Tankut, U. Akyuz, E. Erduran, “Rehabilitation of Existing Reinforced Concrete Structures Using CFRP Fabrics”, CD of the 13th World Conference on Earthquake Engineering, paper no: 1393, Vancouver, Canada, 2004.
- I. Erdem, U. Akyuz, U. Ersoy and G. Özcebe, “Experimental and Analytical Studies on the Strengthening of RC Frames”, CD of the 13th World Conference on Earthquake Engineering, paper no: 673, Vancouver, Canada, 2004.
- U. Akyuz, G. Özdemir, “Mechanical Properties of CFRP Anchorages”, CD of the 13th World Conference on Earthquake Engineering, paper no: 3349, Vancouver, Canada, 2004.
- A. Turer, A. Yakut, U. Akyuz, “Building Damage Patterns in Bingol-Turkey After the May 1st, 2003 Earthquake”, CD of the 13th World Conference on Earthquake Engineering, paper no: 65, Vancouver, Canada, 2004.
- I. Erdem, U. Akyuz, “Nonlinear Analyses of Two Strengthened Infilled RC Frames”, 6th International Congress on Advances in Civil Engineering, 306-314, Istanbul, Turkey, 2004.
- S. Pınarbaşı, U. Akyuz, “Investigation of Compressive Stiffness of Elastomeric Bearings”, 6th International Congress on Advances in Civil Engineering, 694-703, Istanbul, Turkey, 2004.
- S. Pınarbaşı, U. Akyuz, “Seismic Base Isolation: Philosophy, Development and Applications”, CD of the International Conference in Earthquake Engineering, Skopje-Ohrid, Macedonia, 2003.
- A. Turer, U. Akyuz, A. Yakut, B. Yalim, “School Building Damage Assessment after Bingol Earthquake”, CD of the International Conference in Earthquake Engineering, Skopje-Ohrid, Macedonia, 2003.
- Özcebe, G., Ersoy, U., Tankut, T., Akyüz, U., Erduran, E., Keskin, R.S., ve Mertol, C., “Mevcut Betonarme Binaların Deprem Güvenliklerinin Artırılması”, ECAS 2002 International Symposium on Structural and Earthquake Engineering, 13-21, METU, Ankara, 2002.
- Pıdapartı, R.M., P.A.Naick, U.Akyuz, ve D.B.Burr, “Fatigue Data Analysis of Dog Femurs in Bending Using Weibull Method”, Proceedings of the 17th Southern Biomedical Engineering Conference, 110, San Antonio, Texas, U.S.A., 1998.

#### National Proceedings:

- S. Pınarbaşı ve U. Akyüz, “Elastomerik Köprü Yastıklarının Düşük Sıcaklıklardaki Davranışları Üzerine Deneysel Bir Çalışma”, 1nci Köprü ve Viyadükler Sempozyumu, 423-434, Antalya, 2007.
- U. Akyüz ve S. Pınarbaşı, “Sismik Temel İzolasyonu - Kısa Bir Bakış”, Sismik İzolasyonlar Kullanılarak Yapıların Deprem Güvenliğinin Sağlanması Konferansı, 81-91, İstanbul, 2005.
- S. Pınarbaşı ve U. Akyüz, “Çelik Plakalı Elastomerik Köprü Yastıklarının Düşük Sıcaklık Kayma Deneyleri”, Türkiye İnşaat Mühendisliği 17. Teknik Kongre ve Sergisi CD’si, bildiri numarası: 01-0066, İstanbul, 2004.
- Akyüz, U. ve Özdemir, G., “CFRP Ankrajların Mekanik Özelliklerinin Belirlenmesi”, TÜBİTAK-Yapı Mekaniği Laboratuvarları Toplantısı II, 159-162, Konya, 2003.
- Çelik, O.C., Sucuoğlu, H., ve Akyüz, U., “Forced Vibration Testing of Reinforced Concrete Buildings”, Beşinci Ulusal Deprem Mühendisliği Konferansı CD’si, bildiri numarası: AT-095, İstanbul, 2003.
- Pınarbaşı, S. ve Akyüz, U., “Elastomerik Yastıkların Mekanik Özelliklerinin Belirlenmesi”, TÜBİTAK-Yapı Mekaniği Laboratuvarları Toplantısı II, 141-144, Konya, 2003.
- Akyüz, U., Ersoy, U., Özcebe, G. ve Erdem, I., “Betonarme Çerçevelerin Güçlendirilmesi”, TÜBİTAK-Yapı Mekaniği Laboratuvarları Toplantısı II, 153-158, Konya, 2003.
- Akyüz, U., Tankut, T., Ersoy, U., Özcebe, G., Karadoğan, F., İlki, A., Özden, Ş. ve Baran, M., “Mevcut Hasar Görmemiş Binalar için Güçlendirme Yöntemleri Geliştirilmesi”, TÜBİTAK-Yapı Mekaniği Laboratuvarları Toplantısı I, 39-43, Ankara, 2001.
- Akyüz, U. ve A. Ertepinar, “Hiperelastik Malzemeler ve Düzlem Dışı Kesme Davranışının Karşılaştırılması”, Yapı Mekaniği Semineri 94, Dumlupınar Üniversitesi Yayın No.2, 51-62, Kütahya, 1994.
- Akyüz, U. ve A. Ertepinar, “Sıkıştırılabilir Hiperelastik Malzemelerin Elastostatik Davranışlarının Karşılaştırılması”, VIII. Ulusal Mekanik Kongresi, 86-96, Antalya, 1993.

#### Chapter in a Book:

- Akyuz, U., “Alternatif Tasarım Yöntemi: Sismik Temel İzolasyonu”, Binalar için Deprem Mühendisliği Temel İlkeler, ed. E. Canbay, U. Ersoy, G. Özcebe, H. Sucuoğlu ve S.T. Wasti, ISBN: 978-9944-0716-1-1, 2008.
- Özdemir, G., and Akyuz, U., “Tensile Capacities of CFRP Anchors”, Seismic Assessment and Rehabilitation of Existing Buildings, ed. S.T. Wasti and G. Özcebe, 2006.
- Erdem, I., Akyuz, U., Ersoy, U., and Özcebe, G., “A Comparative Study on the Strengthening of RC Frames”, Seismic Assessment and Rehabilitation of Existing Buildings, ed. S.T. Wasti and G. Özcebe, Vol. IV/29, 407-432, Kluwer Academic Publishers, Netherlands, 2003.
- Ersoy, U., Özcebe, G., Tankut, T., Akyuz, U., Erduran, E., and Erdem, I., “Strengthening of Infill Walls with CFRP Sheets”, Seismic Assessment and Rehabilitation of Existing Buildings, ed. S.T. Wasti and G. Özcebe, Vol. IV/29, 305-334, Kluwer Academic Publishers, Netherlands, 2003.