Assoc. Prof. MEHMET DÖRDÜNCÜ

Personal Information

Office Phone: +90 352 207 6666 Extension: 32155

Email: dorduncu@erciyes.edu.tr

Web: https://www.dorduncu.net

International Researcher IDs

ScholarID: soiAqtUAAAAJ

ORCID: 0000-0003-4028-4581

ScopusID: 55806025800

Yoksis Researcher ID: 40565

Biography

Dr. Mehmet Dorduncu is a faculty member in the Department of Mechanical Engineering at Erciyes University. He received his Ph.D. degree in Mechanical Engineering from the University of Arizona in 2018. He was a visiting student at Nasa Langley Research Center (2016), Hampton, VA, where he conducted research on the development of Refined Zigzag Theory for predicting failure in composite structures. He is the co-author of Peridynamic Differential Operator for Numerical Analysis (Springer, 2018). His research has focused on the development of new finite elements for the analysis of composite plates and shells, and the peridynamic differential operator and its applications.

Education Information

Post Doctorate, Bauhaus-Universitaet Weimar, Institute of Structural Mechanics , Germany 2021 - 2022

Post Doctorate, University of Arizona, Aerospace and Mechanical Engineering, Mechanics, United States Of America 2018 - 2019

Doctorate, University of Arizona, Aerospace and Mechanical Engineering, Mechanics, United States Of America 2013 - 2018

Postgraduate, University of Arizona, Aerospace and Mechanical Engineering , Mechanics, United States Of America 2012 - 2013

Postgraduate, Erciyes University, Fen Bilimleri Enstitüsü, Makine Mühendisliği, Turkey 2011 - 2013

Undergraduate, Erciyes University, Mühenslik Fakültesi, Makine Mühendisliği, Turkey 2006 - 2011

Undergraduate, Tallinn University Of Applied Sciences, Faculty Of Mechanics, Estonia 2010 - 2010

Research Areas

Mechanical Engineering, Mechanical, Solid Mechanics, Fracture Mechanics, Finite Element Methods, Mathematics, Integral Equations, Numerical Analysis, Natural Sciences, Engineering and Technology

Academic Titles / Tasks

Associate Professor, Erciyes University, Mühendislik Fakültesi, Makina Mühendisliği, 2020 - Continues

Assistant Professor, Erciyes University, Mühendislik Fakültesi, Makina Mühendisliği, 2019 - 2020

Research Assistant, Erciyes University, Mühendislik Fakültesi, Makina Mühendisliği, 2011 - 2019

Research Assistant, University of Arizona, Aerospace And Mechanical Engineering, Mechanics, 2012 - 2018

Advising Theses

Kayran A., Dördüncü M., MESH INDEPENDENT METHOD FOR PROGRESSIVE FAILURE ANALYSIS OF COMPOSITE STRUCTURES, Doctorate, O.Dede(Student), Continues

Dördüncü M., Fonksiyonel Kademelendirilmiş Yapılarda Meydana Gelen Hasarların Peridinamik Yöntemi Kullanılarak İncelenmesi, Postgraduate, İ.Olmuş(Student), Continues

Dördüncü M., Statik ve Dinamik Yükler Etkisindeki Tabakalı Kompozit Kirişlerin Yapısal Analizleri için Yeni Bir Zikzak Sonlu Eleman Formülasyonu Geliştirilmesi, Postgraduate, B.YURTSEVER(Student), 2022

Jury Memberships

Doctorate, Doctorate, University of Strathclyde, September, 2022

Doctorate, Doctorate, Bauhaus-Universitaet Weimar, August, 2022

Doctorate, Doctorate, University of Strathclyde, May, 2022

Doctorate, Doctorate, Bauhaus-Universitaet Weimar, March, 2022

Doctorate, Doctorate, University of Strathclyde, December, 2020

Post Graduate, Post Graduate, Erciyes Üniversitesi, July, 2020

Published journal articles indexed by SCI, SSCI, and AHCI

I. **Peridynamic differential operator for stress analysis of imperfect functionally graded porous sandwich beams based on refined zigzag theory**
Ermis M., DÖRDÜNCÜ M., Kutlu A.
Applied Mathematical Modelling, vol.133, pp.414-435, 2024 (SCI-Expanded)

II. **A review of peridynamic theory and nonlocal operators along with their computer implementations**
DÖRDÜNCÜ M., Ren H., Zhuang X., Silling S., Madenci E., Rabczuk T.
Computers and Structures, vol.299, 2024 (SCI-Expanded)

III. **Variable horizon ordinary state-based peridynamic analysis in ANSYS framework**
Kaya K., DÖRDÜNCÜ M., Madenci E.
MECHANICS OF ADVANCED MATERIALS AND STRUCTURES, 2024 (SCI-Expanded)

IV. **A new C0 continuous refined zigzag {1,2} finite element formulation for flexural and free vibration analyses of laminated composite beams**
Yurtsever B., Bab Y., Kutlu A., DÖRDÜNCÜ M.
COMPOSITE STRUCTURES, vol.331, 2024 (SCI-Expanded)

V. **An improved peridynamic approach for fatigue analysis of two dimensional functionally graded materials**
Altay U., DÖRDÜNCÜ M., KADIOĞLU F. S.
Theoretical and Applied Fracture Mechanics, vol.128, 2023 (SCI-Expanded)

VI. **A unified phase-field approach for failure prediction in modulus graded adhesively bonded single-lap joints**
Dengiz C. G., DÖRDÜNCÜ M.
Theoretical and Applied Fracture Mechanics, vol.127, 2023 (SCI-Expanded)

VII. **Nonlocal modeling of bi-material and modulus graded plates using peridynamic differential operator**
Dördüncü M., Kutlu A., Madenci E., Rabczuk T.
ENGINEERING WITH COMPUTERS, vol.39, no.1, pp.893-909, 2023 (SCI-Expanded)

VIII. **Finite element implementation of ordinary state-based peridynamics with variable horizon**

DÖRDÜNCÜ M., Madenci E.

ENGINEERING WITH COMPUTERS, vol.39, no.1, pp.641-654, 2023 (SCI-Expanded)

IX. **Investigation of fracture behaviour of one-dimensional functionally graded plates by using peridynamic theory**

KAYA K., Olmus I., DÖRDÜNCÜ M.

JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, vol.38, no.1, pp.319-329, 2023 (SCI-Expanded)

X. **Molecular dynamics investigation for mechanical and failure behaviors of carbon nanotube-reinforced functionally graded aluminum–copper nanocomposites**

Al Muscati I., Al Jahwari F., Pervez T., DÖRDÜNCÜ M.

Mechanics of Advanced Materials and Structures, 2023 (SCI-Expanded)

XI. **Triangular C-0 continuous finite elements based on refined zigzag theory {2,2} for free and forced vibration analyses of laminated plates**

DÖRDÜNCÜ M., Kutlu A., Madenci E.

COMPOSITE STRUCTURES, vol.281, 2022 (SCI-Expanded)

XII. **A peridynamic approach for modeling of two dimensional functionally graded plates**

DÖRDÜNCÜ M., Olmus I., Rabczuk T.

COMPOSITE STRUCTURES, vol.279, 2022 (SCI-Expanded)

XIII. **A novel mixed finite element formulation based on the refined zigzag theory for the stress analysis of laminated composite plates**

Kutlu A., DÖRDÜNCÜ M., Rabczuk T.

COMPOSITE STRUCTURES, vol.267, 2021 (SCI-Expanded)

XIV. **Peridynamic modeling of delaminations in laminated composite beams using refined zigzag theory**

DÖRDÜNCÜ M.

THEORETICAL AND APPLIED FRACTURE MECHANICS, vol.112, 2021 (SCI-Expanded)

XV. **Peridynamic modeling of adhesively bonded beams with modulus graded adhesives using refined zigzag theory**

Dördüncü M.

INTERNATIONAL JOURNAL OF MECHANICAL SCIENCES, vol.185, 2020 (SCI-Expanded)

XVI. **Elastic flexural analysis of adhesively bonded similar and dissimilar beams using refined zigzag theory and peridynamic differential operator**

DÖRDÜNCÜ M., APALAK M. K.

INTERNATIONAL JOURNAL OF ADHESION AND ADHESIVES, vol.101, 2020 (SCI-Expanded)

XVII. **Peridynamic Analysis of Laminated Composite Plates Based on First-Order Shear Deformation Theory**

DÖRDÜNCÜ M., Kaya K., ERGİN Ö. F.

INTERNATIONAL JOURNAL OF APPLIED MECHANICS, vol.12, no.3, 2020 (SCI-Expanded)

XVIII. **Stress analysis of sandwich plates with functionally graded cores using peridynamic differential operator and refined zigzag theory**

Dördüncü M.

Thin-Walled Structures, vol.146, pp.106468, 2020 (SCI-Expanded)

XIX. **Stress wave propagation in a functionally graded adhesive layer between two identical cylinders**

Dördüncü M., Apalak M. K., Reddy J.

JOURNAL OF ADHESION, vol.95, pp.1146-1181, 2019 (SCI-Expanded)

XX. **Stress wave propagation in a through-thickness functionally graded adhesive layer**

Dördüncü M., Apalak M. K., Reddy J.

Journal of Adhesion Science and Technology, vol.33, no.21, pp.2329-2355, 2019 (SCI-Expanded)

XXI. **Weak form of bond-associated non-ordinary state-based peridynamics free of zero energy modes with uniform or non-uniform discretization**

Madenci E., Dorduncu M., Nam Phan N. P., Gu X.

ENGINEERING FRACTURE MECHANICS, vol.218, 2019 (SCI-Expanded)

XXII. **Stress analysis of laminated composite beams using refined zigzag theory and peridynamic differential operator**
DÖRDÜNCÜ M.
COMPOSITE STRUCTURES, vol.218, pp.193-203, 2019 (SCI-Expanded)

XXIII. **Peridynamic least squares minimization**
Madenci E., Dorduncu M., Gu X.
COMPUTER METHODS IN APPLIED MECHANICS AND ENGINEERING, vol.348, pp.846-874, 2019 (SCI-Expanded)

XXIV. **Stress wave propagation in adhesively bonded functionally graded cylinders: an improved model**
Dorduncu M., Apalak M. K., Reddy J. N.
JOURNAL OF ADHESION SCIENCE AND TECHNOLOGY, vol.33, pp.156-186, 2019 (SCI-Expanded)

XXV. **Weak form of peridynamics for nonlocal essential and natural boundary conditions**
Madenci E., Dorduncu M., Barut A., Nam Phan N. P.
COMPUTER METHODS IN APPLIED MECHANICS AND ENGINEERING, vol.337, pp.598-631, 2018 (SCI-Expanded)

XXVI. **A state-based peridynamic analysis in a finite element framework**
Madenci E., Dorduncu M., Barut A., Nam Phan N. P.
ENGINEERING FRACTURE MECHANICS, vol.195, pp.104-128, 2018 (SCI-Expanded)

XXVII. **Numerical solution of linear and nonlinear partial differential equations using the peridynamic differential operator**
Madenci E., Dorduncu M., Barut A., Futch M.
NUMERICAL METHODS FOR PARTIAL DIFFERENTIAL EQUATIONS, vol.33, no.5, pp.1726-1753, 2017 (SCI-Expanded)

XXVIII. **Stress wave propagation in adhesively bonded functionally graded circular cylinders**
Dorduncu M., APALAK M. K.
Journal of Adhesion Science and Technology, vol.30, no.12, pp.1281-1309, 2016 (SCI-Expanded)

XXIX. **Elastic wave propagation in functionally graded circular cylinders**
Dorduncu M., APALAK M. K., Cherukuri H. P.
COMPOSITES PART B-ENGINEERING, vol.73, pp.35-48, 2015 (SCI-Expanded)

XXX. **Stress wave propagation in adhesively bonded similar and dissimilar circular cylinders**
Dorduncu M., APALAK M. K.
JOURNAL OF ADHESION SCIENCE AND TECHNOLOGY, vol.29, no.8, pp.778-806, 2015 (SCI-Expanded)

Articles Published in Other Journals

I. **Dual Horizon Peridynamic Approach for Studying the Effect of Porous Media on the Dynamic Crack Growth in Brittle Materials**
Altay U., DÖRDÜNCÜ M., KADIOĞLU F. S.
Journal of Peridynamics and Nonlocal Modeling, vol.6, no.3, pp.505-529, 2024 (Scopus)

II. **Coupling of Peridynamics and Timoshenko Beam Theory for the Stress Analysis of Laminated Composite Materials**
Dördüncü M.
Havacılık ve Uzay Teknolojileri Dergisi, vol.14, no.1, pp.53-62, 2021 (Peer-Reviewed Journal)

III. **Peridynamics for the solution of the steady state heat conduction problem in plates with insulated cracks**
Dördüncü M.
Havacılık ve Uzay Teknolojileri Dergisi, vol.12, no.2, pp.145-155, 2019 (Peer-Reviewed Journal)

IV. **Peridynamic solution of the steady state heat conduction problem in plates with insulated cracks**
DÖRDÜNCÜ M.
Journal of Aeronautics and Space Technologies, vol.12, no.2, pp.145-155, 2019 (Peer-Reviewed Journal)

V. **Flexure Analysis of Functionally Graded Plates Using {2,2}-Refined Zigzag Theory**
Dördüncü M.

Books & Book Chapters

I. **Peridynamics for axisymmetric analysis**
Mitts C., Madenci E., Dördüncü M.
in: Peridynamic Modeling, Numerical Techniques, and Applications, Erdogan Madenci, Editor, Elsevier Science,
Oxford/Amsterdam , Oxford, 2021

II. **Coupled Peridynamics and XFEM**
Dördüncü M., Madenci E., Barut A.
in: Peridynamic Modeling, Numerical Techniques, and Applications, Erdogan Madenci, Editor, Elsevier Science,
Oxford/Amsterdam , Oxford, 2021

III. **Peridynamic modeling of laminated composites**
Madenci E., Dördüncü M.
in: Size-Dependent Continuum Mechanics Approaches, Esmaeal Ghavanloo,Ahmad Fazelzadeh,Francesco Marotti
de Sciarra, Editor, Springer, London/Berlin , Massachusetts, 2020

IV. **Peridynamics for Numerical Analysis**
Madenci E., Barut A., Dördüncü M.
in: Advances in Computing and Information in Engineering (ACIER) (In-press), John G. Michopoulos, Editor,
American Society of Mechanical Engineers (ASME) , Massachusetts, 2020

V. **Peridynamic differential operator for numerical analysis**
Madenci E., Barut A., DÖRDÜNCÜ M.
Springer, London/Berlin , New York, 2019

Refereed Congress / Symposium Publications in Proceedings

I. **A dual-horizon peridynamic approach for fatigue analysis of functionally graded materials**
Altay U., Dördüncü M., Kadioglu S.
27th International Conference on Composite Structures (ICCS27), Bologna, Italy, 3 - 05 September 2024

II. **Development of mixed finite element formulation for laminated composite cylindrical shells incorporating refined zigzag theory**
Bab Y., Kutlu A., Dördüncü M.
9th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS), Lisbon,
Portugal, 3 - 06 June 2024

III. **Modeling of viscoelastic materials by using an improved ordinary state-based peridynamic theory with variable horizon**
Dördüncü M.
ASME 2024 Aerospace Structures, Structural Dynamics, and Materials Conference (SSDM), Washington, United
States Of America, 28 April - 01 May 2024

IV. **Investigation of damage in materials by using bond-based peridynamic theory and finite element method**
Kaya K., Dördüncü M., Madenci E.
23rd National Congress of Mechanics, Konya, Turkey, 4 - 08 September 2023

V. **Refined zigzag theory based finite element for static analysis of layered composite beams interacting with Winkler foundation**
Yurtseven B., Bab Y., Kutlu A., Dördüncü M.
23rd National Congress of Mechanics, Konya, Turkey, 4 - 08 September 2023

VI. **Investigation of stop hole effect on the dynamic crack propagation by using dual horizon peridynamic approach**

Altay U., Dördüncü M., Kadıoğlu F. S.

23rd National Congress of Mechanics, Konya, Turkey, 4 - 08 September 2023

VII. **Modeling of laminated composite structures by using physics informed neural networks and Mindlin plate theory**

Aydogan G., Ermis M., Dördüncü M.

23rd National Congress of Mechanics, Konya, Turkey, 4 - 08 September 2023

VIII. **Investigation of damage in bimetallic plates by using phase field approach**

Dengiz C. G., Dördüncü M.

23rd National Congress of Mechanics, Konya, Turkey, 4 - 09 September 2023

IX. **Peridynamics for predicting fatigue behavior of modulus graded plates**

Altay U., Dördüncü M., Kadıoğlu F. S.

ASME Aerospace Structures, Structural Dynamics, and Materials Conference, California, United States Of America, 19 - 21 June 2023

X. **Thermomechanical analysis of one dimensional functionally graded plates by using peridynamic theory**

Dördüncü M., Ergin Ö. F.

2nd International Conference on Computations for Science and Engineering, Rimini, Italy, 30 August - 02 September 2022, vol.0

XI. **A Truss Element for Ordinary State-Based Peridynamic Analysis With Uniform or Non-Uniform Discretization**

Dördüncü M., Kaya K., Madenci E.

ASME 2021 International Mechanical Engineering Congress & Exposition, Arizona, United States Of America, 1 - 05 November 2021

XII. **Elastik zemine oturan tabakalı kompozit kirişlerin eğilme davranışı için geliştirilmiş zikzak teorisi tabanlı karışık sonlu eleman formülasyonu**

Bab Y., Kutlu A., Dördüncü M.

21. Ulusal Mekanik Kongresi, Adana, Turkey, 6 - 08 September 2021

XIII. **Peridynamics for dynamic fracture analysis of two dimensional functionally graded plates under thermal loads**

Olmus I., Dördüncü M.

2nd International Workshop on Plasticity, Damage and Fracture of Engineering Materials, Ankara, Turkey, 18 - 20 August 2021

XIV. **Weak form of bond-associated non-ordinary state based peridynamics for modeling composite materials**

Dördüncü M.

2nd International Workshop on Plasticity, Damage and Fracture of Engineering Materials, Ankara, Turkey, 18 - 20 August 2021

XV. **A novel ordinary state based peridynamic truss element with uniform/nonuniform discretization**

Dördüncü M., Madenci E.

2nd International Workshop on Plasticity, Damage and Fracture of Engineering Materials, Ankara, Turkey, 18 - 20 August 2021

XVI. **Peridynamic Analysis of One Dimensional Functionally Graded Plates**

Olmus I., Dördüncü M.

24th International Conference on Composite Structures- ICCS24 , Porto, Portugal, 14 - 18 June 2021

XVII. **A peridynamic approach for modeling composite laminates**

Madenci E., Yaghoobi A., Barut A., DÖRDÜNCÜ M., Phan N.

AIAA Science and Technology Forum and Exposition, AIAA SciTech Forum 2021, Virtual, Online, 11 - 15 January 2021, pp.1-23

XVIII. **Peridynamics for predicting damage in functionally graded materials**

Dördüncü M., Olmus I.

23rd International Conference on Composite Structures, Porto, Portugal, 1 - 04 September 2020

XIX. **PERIDYNAMICS AND REFINED ZIGZAG THEORY FOR PROGRESSIVE FAILURE ANALYSIS OF VISCOELASTIC COMPOSITES**
Dördüncü M., Madenci E.
19th International Conference on New Trends in Fatigue and Fracture, Arizona, United States Of America, 8 - 10 October 2019

XX. **PERIDYNAMICS FOR BENDING ANALYSIS OF LAMINATED COMPOSITE PLATES BASED ON REFINED ZIGZAG THEORY**
Dördüncü M., Ergin Ö. F.
29th International Workshop on Computational Mechanics of Materials (IWCMM29), Dubrovnik, Croatia, 15 - 18 September 2019

XXI. **Bending behavior of laminated composite plates with embedded cracks by using refined zigzag theory**
Dördüncü M., Ergin Ö. F.
1st International Workshop on Plasticity, Damage and Fracture of Engineering Materials, Ankara, Turkey, 22 - 23 August 2019

XXII. **A State-Based Peridynamic Truss Element for Progressive Failure Analysis of Composites**
Dördüncü M., Madenci E.
1st International Workshop on Plasticity, Damage and Fracture of Engineering Materials, Ankara, Turkey, 22 - 23 August 2019

XXIII. **Non-ordinary State-based Peridynamics Free of Zero Energy Modes**
Madenci E., Dördüncü M.
15th U.S. National Congress on Computational Mechanics (USNCCM15), Texas, United States Of America, 28 July - 01 August 2019

XXIV. **Peridynamics for predicting thermal expansion coefficient of graphene**
Madenci E., Barut A., Dorduncu M.
69th IEEE Electronic Components and Technology Conference, ECTC 2019, Nevada, United States Of America, 28 - 31 May 2019, pp.825-833

XXV. **Progressive failure analysis of composites based on peridynamics and refined zigzag theory**
Madenci E., DÖRDÜNCÜ M., Barut A., Phan N. D.
AIAA Scitech Forum, 2019, California, United States Of America, 7 - 11 January 2019

XXVI. **Peridynamic Modeling of Composite Laminates**
Madenci E., DÖRDÜNCÜ M., Barut A., Phan N. D.
ASME 2018 International Mechanical Engineering Congress & Exposition, Pittsburgh, United States Of America, 9 - 15 November 2018

XXVII. **Peridynamic Modeling of Composite Panels Under Impact Loading**
Madenci E., DÖRDÜNCÜ M., Phan N. D.
12th International Conference on Sandwich Structures, Lausanne, Switzerland, 19 - 22 August 2018

XXVIII. **Direct Coupling of Peridynamics with Finite Elements Without a Transition Zone**
Madenci E., DÖRDÜNCÜ M., Barut A., Phan N. D.
13th World Congress in Computational Mechanics, New York, United States Of America, 22 - 27 July 2018

XXIX. **Peridynamic modeling of impact damage in laminated composites**
Madenci E., DÖRDÜNCÜ M., Barut A., Phan N. D.
18th International Conference on New Trends in Fatigue and Fracture, Lisbon, Portugal, 17 - 20 July 2018

XXX. **Peridynamics Guided Crack Growth in Isogeometric Analysis**
Madenci E., DÖRDÜNCÜ M., Phan N. D.
10th European Solid Mechanics Conference, Bologna, Italy, 2 - 06 July 2018

XXXI. **A State-Based Peridynamic Element**
Madenci E., DÖRDÜNCÜ M., Barut A., Phan N. D.
The 18th U.S. National Congress on Theoretical and Applied Mechanics, Chicago, United States Of America, 4 - 09 June 2018

XXXII. **Coupling of peridynamics with finite elements without an overlap zone**

Madenci E., Barut A., Dorduncu M., Phan N. D.

AIAA/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, 2018, Florida, United States Of America, 8 - 12 January 2018

XXXIII. **Weak form of peridynamics**

Madenci E., Dorduncu M., Barut A., Phan N. D.

AIAA/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, 2018, Florida, United States Of America, 8 - 12 January 2018

XXXIV. **Peridynamics for progressive failure analysis of composites**

Madenci E., Dorduncu M., Phan N.

33rd Technical Conference of the American Society for Composites 2018, Washington, United States Of America, 24 - 27 September 2018, vol.1, pp.599-613

XXXV. **Isogeometric analysis using peridynamics and XFEM**

Madenci E., Kefal A., Dorduncu M., Barut A., Yildiz M.

AIAA/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, 2018, Florida, United States Of America, 8 - 12 January 2018

XXXVI. **Weak Form of Peridynamic Equilibrium Equations**

DÖRDÜNCÜ M., Madenci E., Barut A.

ASME 2017 International Mechanical Engineering Congress & Exposition, Tampa, Fl, United States Of America, 3 - 09 November 2017

XXXVII. **Peridynamics for solving nonlinear partial differential equations**

Madenci E., DÖRDÜNCÜ M.

14th U.S. National Congress on Computational Mechanics (USNCCM14), Montreal, Canada, 17 - 20 July 2017

XXXVIII. **A three-node flat shell element based on Refined Zigzag Theory**

DÖRDÜNCÜ M., Tessler A., Madenci E.

3rd International Conference on Mechanics of Composites, Bologna, Italy, 4 - 07 July 2017

XXXIX. **Peridynamic augmented XFEM**

DÖRDÜNCÜ M., Barut A., Madenci E., Phan N. D.

58th AIAA/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, 2017, Texas, United States Of America, 9 - 13 January 2017

XL. **Peridynamic solution of free boundary problems**

DÖRDÜNCÜ M., Barut A., Madenci E.

ASME 2016 International Mechanical Engineering Congress & Exposition, Phoenix, Az, United States Of America, 11 - 17 November 2016

XLI. **Stress Wave Propagation in a Functionally Graded Cylinder**

APALAK M. K., DÖRDÜNCÜ M.

14 th International Symposium Functionally Graded Materials Multiscale & Multifunctional Structures, Bayreuth, Germany, 18 - 21 September 2016, pp.173-177

XLII. **Peridynamic truss element for viscoelastic deformation**

DÖRDÜNCÜ M., Barut A., Madenci E.

57th AIAA/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, 2016, California, United States Of America, 4 - 08 January 2016

XLIII. **Ordinary-state based peridynamic truss element**

DÖRDÜNCÜ M., Barut A., Madenci E.

56th AIAA/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference 2015, Florida, United States Of America, 5 - 09 January 2015

XLIV. **A refined zigzag element for modeling sandwich construction with embedded stiffeners**

DÖRDÜNCÜ M., Barut A., Madenci E., Tessler A.

56th AIAA/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference 2015, Florida, United States Of America, 5 - 09 January 2015

XLV. **Failure prediction in sandwich panels under blast loading using a refined zigzag element**

Dorduncu M., Barut A., Madenci E.

54th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference, Boston, MA, United States Of America, 8 - 11 April 2013

Supported Projects

Dördüncü M., Dengiz C. G., Ergin Ö. F., TUBITAK Project, Fonksiyonel Kademelendirilmiş Yapıştırma Bağlantılarında Oluşan Hasarların Faz Alanı Modeli Kullanılarak İncelenmesi, 2022 - 2023

Dördüncü M., Kutlu A., TUBITAK Project, Tabakalı Kompozit Kirişlerin Statik ve Dinamik Yüklemeler Altındaki Yapısal Analizleri için Yeni Bir Zikzak Sonlu Eleman Formülasyonu Geliştirilmesi, 2021 - 2022

Dördüncü M., Project Supported by Higher Education Institutions, Peridinamik Teorisi ve Sonlu Elemanlar Metodu Kullanılarak Malzemelerin Gerilme ve Hasar Analizleri İçin Sayısal Model Geliştirilmesi, 2021 - 2022

Dördüncü M., Sarı S. E., TUBITAK Project, İÇERİSİNDE ÇATLAK BULUNAN LİTYUM İYON BATARYALARININ PERİDİNAMİK YÖNTEMİYLE MODELLENMESİ, 2020 - 2021

Dördüncü M., Üçbunar M. O., TUBITAK Project, PERİDİNAMİK TÜREV OPERATÖRÜ VE GELİŞTİRİLMİŞ ZİGZAG TEORİSİ KULLANILARAK FONKSİYONEL KADEMELENDİRİLMİŞ ÇEKİRDEĞE SAHİP SANDVİÇ KİRİŞLERDE GERİLME ANALİZİ, 2019 - 2020

Dördüncü M., Madenci E., Project Supported by Public Organizations in Other Countries, Material Failure Prediction through Peridynamics (MURI), 2013 - 2020

APALAK M. K., DÖRDÜNCÜ M., REDDY J. N., Project Supported by Higher Education Institutions, İşlevsel Kademelendirilmiş Dairesel Silindirlerde Elastik Dalga Yayılımı, 2016 - 2019

Dördüncü M., Madenci E., Tessler A., Project Supported by Public Organizations in Other Countries, Demonstration of Refined-Zigzag Theory for predicting failure in composite structures, 2016 - 2017

Activities in Scientific Journals

Solid and Structural Mechanics, Committee Member, 2021 - Continues
Mechanics Of Materials, Committee Member, 2020 - Continues

Memberships / Tasks in Scientific Organizations

ASME Turkey Section, Chairman, 2023 - Continues, United States Of America
Teorik ve Uygulamalı Mekanik Türk Milli Komitesi, Member of Science Committee, 2022 - Continues, Turkey
Society of Engineering Science (SES) , Member, 2021 - Continues, United States Of America
Turkish Solid Mechanics Group, Member of Science Committee, 2019 - Continues, Turkey
The American Institute of Aeronautics and Astronautics (AIAA), Member, 2013 - Continues
Makine Mühendisleri Odası, Member, 2011 - Continues

Tasks In Event Organizations

Dördüncü M., 2nd International Workshop on Plasticity, Damage and Fracture of Engineering Materials, Scientific Congress, Ankara, Turkey, Ağustos 2021

Dördüncü M., 19th International Conference on New Trends in Fatigue and Fracture, Scientific Congress, Arizona, United States Of America, Ekim 2019

Dördüncü M., 1st International Workshop on Plasticity, Damage and Fracture of Engineering Materials, Scientific Congress, Ankara, Turkey, Ağustos 2019

Dördüncü M., 9th International Conference on Recent Advances in Space Technologies, Scientific Congress, İstanbul, Turkey, Haziran 2019

Metrics

Publication: 86
Citation (WoS): 627
Citation (Scopus): 997
H-Index (WoS): 14
H-Index (Scopus): 14

Invited Talks

The First International Graduate Studies Symposium, Conference, Dokuz Eylul University, Turkey, November 2022
Peridynamics for failure prediction in materials, Seminar, Izmir High Technology Institute, Turkey, September 2022
Ordinary state-based truss element, Workshop, The University of North Carolina at Charlotte, United States Of America, July 2016

Scholarships

2224-A Yurt Dışı Bilimsel Etkinliklere Katılımı Destekleme Programı, TUBITAK, 2019 - 2019
Visiting Student, Official Institutions of Foreign Countries, 2019 - 2019
Graduate Research Assistant, University, 2017 - 2018
Yurtdışı Doktora Bursu, YOK, 2013 - 2018
Graduate School Full Scholarship (Stipend + Tuition), University, 2017 - 2017
Graduate Assistantship, University, 2013 - 2013

Non Academic Experience

State Agency, Nasa Langley Research Center
Other, Fluted-Core Sandwich Composite Structures, Nasa Larc.
UNIVERSITY OF ARIZONA