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Personal Information

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Education Information

Doctorate, Middle East Technical University, Institute Of Applied Mathematics, Bilimsel Hesaplamalar, Turkey 2004 - 2008

Postgraduate, Middle East Technical University, Graduate School Of Natural And Applied Sciences, Matematik, Turkey 1997 - 2000

Undergraduate, Middle East Technical University, Fen Edebiyat Fakültesi, Matematik, Turkey 1992 - 1997

Foreign Languages

English, B2 Upper Intermediate

Dissertations

Doctorate, The finite element method over a simple stabilizing grid applied to fluid flow problems, Middle East Technical University, Uygulamalı Matematik Enstitüsü, Bilimsel Hesaplamalar, 2008

Postgraduate, Dual reciprocity boundary element method for Poisson's equations using osculatory radial basis functions, Middle East Technical University, Fen Bilimleri Enstitüsü, Matematik, 2000

Research Areas

Mathematics, Differential Equations, Partial Differential Equations, Numerical Analysis, Natural Sciences

Academic Titles / Tasks

Professor, Karadeniz Technical University, Fen Fakültesi, Matematik, 2018 - Continues

Associate Professor, Karadeniz Technical University, Fen Fakültesi, Matematik, 2013 - 2018

Assistant Professor, Karadeniz Technical University, Fen Fakültesi, Matematik, 2009 - 2013

Açıklama

- AYDIN S. H., Stabilize Sonlu Elemanlar Yöntemi ile Adaptif Ağ Oluşturma, Postgraduate, M.Ceylan(Student), 2014
AYDIN S. H., Değişken Difüzyon Katsayı Konveksiyon-Difüzyon Denklemlerinin Sonlu Elemanlar Yöntemi ile Çözümü, Postgraduate, C.ÇİFTÇİ(Student), 2012

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Stabilization in 3-D FEM and solution of the MHD equations**
Aydin S. H., Erdoğan M.
Mathematical Methods in the Applied Sciences, vol.46, no.12, pp.13395-13410, 2023 (SCI-Expanded)
- II. **Stabilized FEM solution of MHD duct flow with conducting cracks in the insulation**
Tezer M., Aydin S. H.
Journal of Computational and Applied Mathematics, vol.423, 2023 (SCI-Expanded)
- III. **Stabilized solution of the 3-D MHD flow problem with FEM-BEM coupling approach**
Han Aydin S. H.
Engineering Analysis with Boundary Elements, vol.140, pp.519-530, 2022 (SCI-Expanded)
- IV. **Particle-particle interactions in axisymmetric MHD viscous flow**
sellier a., AYDIN S. H.
MAGNETOHYDRODYNAMICS, vol.56, no.2-3, pp.187-194, 2020 (SCI-Expanded)
- V. **FEM solution of MHD flow in an array of electromagnetically coupled rectangular ducts**
Tezer-Sezgin M., Aydin S. H.
PROGRESS IN COMPUTATIONAL FLUID DYNAMICS, vol.20, no.1, pp.40-50, 2020 (SCI-Expanded)
- VI. **Stabilizing subgrid FEM solution of the natural convection flow under high magnitude magnetic field on sinusoidal corrugated enclosure**
Aydin S. H., Tezer-Sezgin M.
INTERNATIONAL JOURNAL OF COMPUTER MATHEMATICS, vol.97, pp.420-430, 2019 (SCI-Expanded)
- VII. **Stabilized FEM-BEM coupled solution of MHD pipe flow in an unbounded conducting medium**
Aydin S. H., Selvitopi H.
ENGINEERING ANALYSIS WITH BOUNDARY ELEMENTS, vol.87, pp.122-132, 2018 (SCI-Expanded)
- VIII. **Accretive growth kinematics in Minkowski 3-space**
TUĞ G., Ozdemir Z., AYDIN S. H., EKMEKİ F. N.
INTERNATIONAL JOURNAL OF GEOMETRIC METHODS IN MODERN PHYSICS, vol.14, no.5, 2017 (SCI-Expanded)
- IX. **CREEPING AXISYMMETRIC MHD FLOW ABOUT A SPHERE TRANSLATING PARALLEL WITH A UNIFORM AMBIENT MAGNETIC FIELD**
Sellieri A., Aydin S. H.
MAGNETOHYDRODYNAMICS, vol.53, no.1, pp.5-13, 2017 (SCI-Expanded)
- X. **Free-Space Fundamental Solution of a 2D Steady Slow Viscous MHD Flow**
AYDIN S. H., Sellier A., Tezer-Sugin M.
CMES-COMPUTER MODELING IN ENGINEERING, vol.102, no.5, pp.393-406, 2014 (SCI-Expanded)
- XI. **Free-Space Fundamental Solution of a 2D Steady Slow Viscous MHD Flow**
Sellier A., Aydin S. H., Tezer-Sezgin M.
CMES-COMPUTER MODELING IN ENGINEERING & SCIENCES, no.5, pp.393-406, 2014 (SCI-Expanded)
- XII. **Topological flow structures in an L-shaped cavity with horizontal motion of the upper lid**
DELİCEOĞLU A., AYDIN S. H.
JOURNAL OF COMPUTATIONAL AND APPLIED MATHEMATICS, vol.259, pp.937-943, 2014 (SCI-Expanded)
- XIII. **A DRBEM solution for MHD pipe flow in a conducting medium**
AYDIN S. H., Tezer-Sezgin M.
JOURNAL OF COMPUTATIONAL AND APPLIED MATHEMATICS, vol.259, pp.720-729, 2014 (SCI-Expanded)
- XIV. **BEM solution of MHD flow in a pipe coupled with magnetic induction of exterior region**
Tezer-Sezgin M., AYDIN S. H.
COMPUTING, vol.95, no.1, 2013 (SCI-Expanded)

- XV. **Flow bifurcation and eddy genesis in an L-shaped cavity**
 DELİCEOĞLU A., AYDIN S. H.
 COMPUTERS & FLUIDS, vol.73, pp.24-46, 2013 (SCI-Expanded)
- XVI. **gVS gamma coupling constant in light cone QCD**
 AYDIN C., AYDIN S. H., Keskin F., YILMAZ A. H.
 PHYSICAL REVIEW D, vol.84, no.9, 2011 (SCI-Expanded)
- XVII. **Two-Level Finite Element Method with a Stabilizng Subgrid for the Natural Convention Flow Simulation in Different Geometries**
 Aydin S. H.
 NUMERICAL HEAT TRANSFER PART A-APPLICATIONS, vol.59, no.10, pp.799-813, 2011 (SCI-Expanded)
- XVIII. **Two-level finite element method with a stabilizing subgrid for the incompressible MHD equations**
 Aydin S. H., Nesliturk A. I., Tezer-Sezgin M.
 INTERNATIONAL JOURNAL FOR NUMERICAL METHODS IN FLUIDS, vol.62, no.2, pp.188-210, 2010 (SCI-Expanded)
- XIX. **Two-level finite element method with a stabilizing subgrid for the incompressible Navier-Stokes equations**
 Nesliturk A. I., Aydin S. H., Tezer-Suzgin M.
 INTERNATIONAL JOURNAL FOR NUMERICAL METHODS IN FLUIDS, vol.58, no.5, pp.551-572, 2008 (SCI-Expanded)
- XX. **Solution of magnetohydrodynamic flow problems using the boundary element method**
 Tezer-Sugin M., Aydin S. H.
 ENGINEERING ANALYSIS WITH BOUNDARY ELEMENTS, vol.30, no.5, pp.411-418, 2006 (SCI-Expanded)
- XXI. **Dual reciprocity boundary element method for magnetohydrodynamic flow using radial basis functions**
 Tezer-Sezgin M., Aydin S. H.
 INTERNATIONAL JOURNAL OF COMPUTATIONAL FLUID DYNAMICS, vol.16, no.1, pp.49-63, 2002 (SCI-Expanded)

Articles Published in Other Journals

- I. **STABILIZED FEM SOLUTION OF MHD FLOW OVER ARRAY OF CUBIC DOMAINS**
 AYDIN S. H.
 Communications Faculty of Sciences University of Ankara Series A1: Mathematics and Statistics, vol.72, no.3, pp.839-856, 2023 (ESCI)
- II. **3D Stabilized FEM Solution of the MHD Equations in an External Medium and Around a Solid**
 AYDIN S. H., Erdogan M. C.
 Cumhuriyet Science Journal, vol.44, no.3, pp.547-560, 2023 (Peer-Reviewed Journal)
- III. **STABILIZED FEM SOLUTIONS OF MHD EQUATIONS AROUND A SOLID AND INSIDE A CONDUCTING MEDIUM**
 Aydin S. H.
 COMMUNICATIONS FACULTY OF SCIENCES UNIVERSITY OF ANKARA-SERIES A1 MATHEMATICS AND STATISTICS, vol.68, no.1, pp.197-208, 2019 (ESCI)
- IV. **Axisymmetric MHD viscous flows bounded by a solid plane normal to a uniform ambient magnetic field: fundamental flows and application to a solid sphere translating normal to the wall**
 Sellier A., Aydin S. H.
 EUROPEAN JOURNAL OF COMPUTATIONAL MECHANICS, vol.27, pp.443-468, 2018 (ESCI)
- V. **Stabilized FEM Solution of Variable Coefficient Convection Diffusion Equation**
 AYDIN S. H.
 International Journal of Applied Mathematics, vol.29, no.3, pp.371-380, 2016 (Scopus)
- VI. **Fundamental free-space solutions of a steady axisymmetric MHD viscous flow**
 Sellier A., Aydin S. H.
 EUROPEAN JOURNAL OF COMPUTATIONAL MECHANICS, vol.25, pp.194-217, 2016 (ESCI)
- VII. **FEM-BEM Coupling for the MHD Pipe Flow in an Exterior Region**

- AYDIN S. H.
Open Journal of Fluid Dynamics, vol.3, pp.184-190, 2013 (Peer-Reviewed Journal)
- VIII. **Numerical Solutions of Grad-Shafranov equation for the distribution of magnetic flux in nuclear fusion devices**
AYDIN S. H., TEZER SEZGİN M.
Turkish J. Eng. Env. Sci., vol.32, pp.265-275, 2008 (Peer-Reviewed Journal)
- IX. **Numerical solution of Grad-Shafranov equation for the distribution of magnetic flux in nuclear fusion devices**
AYDIN S. H., TEZER M.
TURKISH JOURNAL OF ENGINEERING AND ENVIRONMENTAL SCIENCES, vol.32, no.5, 2008 (Scopus)
- X. **Numerical Solution Of Magnetohydrodynamic Flow Problems Using The Boundary Element Method**
TEZER M., AYDIN S. H.
WIT Transactions on Modelling and Simulation, vol.39, pp.453-461, 2005 (Peer-Reviewed Journal)
- XI. **Numerical solution of magnetohydrodynamic flow problems using boundary element method**
AYDIN S. H., TEZER SEZGİN M.
WIT Transaction on Modeling and Simulation, vol.39, pp.31-39, 2005 (Peer-Reviewed Journal)

Refereed Congress / Symposium Publications in Proceedings

- I. **Stabilized FEM Solution of Liquid-metal MHD Flow in a Rectangular Duct with Conducting Cracks**
TEZER M., AYDIN S. H.
ICAME'21, International Conference on Applied Mathematics in Engineering, Balikesir, Turkey, 1 - 03 September 2021
- II. **Stabilization in 3-D FEM and Solution of MHD Duct Equations**
AYDIN S. H., Erdoğan M. C.
ICAME'21, International Conference on Applied Mathematics in Engineering, Balikesir, Turkey, 1 - 03 September 2021
- III. **3-D MHD Flow Over Array of Cubic Ducts**
AYDIN S. H.
ICAME'21, International Conference on Applied Mathematics in Engineering, Balikesir, Turkey, 1 - 03 September 2021
- IV. **Axisymmetric viscous MHD flow about a solid sphere translating in cylindrical tube**
sellier a., AYDIN S. H.
ICTAM 2020 IUTAM 25th International Congress of Theoretical and Applied Mechanics, Milan, Italy, 22 - 27 August 2021
- V. **Stabilized FEM Solutions of 3D MHD Equations Inside a Conducting Medium**
AYDIN S. H.
IOCENS'21 International Online Conferences on Engineering and Natural Sciences, Gümüşhane, Turkey, 5 - 07 July 2021
- VI. **BEM and FEM Solutions of 3D Laplace Equation**
Erdoğan M. C., AYDIN S. H.
IOCENS'21 International Online Conferences on Engineering and Natural Sciences, Gümüşhane, Turkey, 5 - 07 July 2021
- VII. **Particle-wall interactions in two-dimensional viscous MHD**
sellier a., AYDIN S. H.
BETEQ 2019, International Conference on Boundary Element and Meshless Techniques, Palermo, Italy, 22 - 29 July 2019
- VIII. **Fundamental axisymmetric MHD creeping flows produced by a circular ring located near a plane solid slip wall**
AYDIN S. H., sellier a.

- CMMSE 2018, 18th International conference in Computational and Mathematical Methods in Science and Engineering, Cadiz, Spain, 9 - 13 July 2018
- IX. **Stabilizing Subgrid FEM Solution of the Natural Convection Flow Under High Magnitude Magnetic Field on Sinusoidal Corrugated Enclosure**
AYDIN S. H., TEZER M.
CMMSE 2018, 18th International conference in Computational and Mathematical Methods in Science and Engineering, Cadiz, Spain, 9 - 13 July 2018
- X. **Pariticle-wall interactions axisymmetric MHD viscous**
sellier a., AYDIN S. H.
BETEQ 2018, International Conference on Boundary Element and Meshless Techniques, 9 - 11 July 2018
- XI. **Particle-particle interactions in axisymmetric MHD creeping flow**
AYDIN S. H., sellier a.
IABEM 2018, 26 - 28 June 2018
- XII. **Fundamental coupled MHD creeping flow and electric potential for a conducting liquid bounded by a plane slip wall**
sellier a., AYDIN S. H.
IABEM 2018 Symposium of the International Association for Boundary Element Methods, Paris, France, 26 - 28 June 2018
- XIII. **The Stabilized FEM Solution of the MHD Flow in a Rectangular Duct with Perturbed Boundary**
TEZER M., AYDIN S. H.
CMES 2018, 3rd International Conference on Computational Mathematics and Engineering Sciences, Girne, Cyprus (Kktc), 4 - 06 May 2018
- XIV. **Particle-particle interactions in axisymmetric MHD viscous flow**
AYDIN S. H., SELLIER A.
BETEQ 2017, Bükkreş, Romania, 11 - 13 July 2017
- XV. **Viscous axisymmetric MHD flow about a solid sphere translating in a circular solid tube**
ÇELİK T., AYDIN S. H., SELLIER A.
BETEQ 2017, Bükkreş, Romania, 11 - 13 July 2017
- XVI. **Fundamental three-dimensional MHD creeping flow bounded by a plane motionless wall normal to a uniform ambient magnetic field**
SELLIER A., AYDIN S. H.
BETEQ 2017, Bükkreş, Romania, 11 - 13 July 2017
- XVII. **FEM solution of MHD flow im rectangular ducts with different wall conductivities and slip conditions**
TEZER M., AYDIN S. H.
2017 EMI International Conference, 19 - 22 March 2017
- XVIII. **FEM Solution of MHD Flow in Rectangular Ducts with Different Wall Conducting and Slip Conditions**
TEZER M., AYDIN S. H.
3rd EMI International Conference, Janeiro, Brazil, 19 - 22 March 2017
- XIX. **A boundary formulation for the axisymmetric MHD slow viscous flow about a sphere translating parallel with a uniform ambient magnetic field**
SELLIER A., AYDIN S. H.
BETEQ 2016, International Conference on Boundary Element and Meshless Techniques, 11 - 13 July 2016
- XX. **Particle particle interactions in 2D MHD viscous flow**
AYDIN S. H., SELLIER A.
BETEQ 2016, International Conference on Boundary Element and Meshless Techniques, 11 - 13 July 2016
- XXI. **Creeping axisymmetric MHD flow about a sphere translating parallel with a uniform ambient magnetic field**
SELLIER A., AYDIN S. H.
PAMIR 2016, 10th PAMIR International Conference Fundamental and Applied MHD, 20 - 24 June 2016
- XXII. **Stabilized FEM Solution of 2D Steady Slow Viscous MHD Flow of an Unbounded Conducting Liquid About Solid Particles**

- TEZER M., AYDIN S. H., SELLIER A.
PAMIR 2016, 10th PAMIR International Conference Fundamental and Applied MHD, 20 - 24 June 2016
- XXIII. **FEM BEM Coupled Solution of MHD Pipe Flow**
AYDIN S. H., SELVİTOPİ H.
PAMIR 2016, 10th PAMIR International Conference Fundamental and Applied MHD, 20 - 24 June 2016
- XXIV. **A New Boundary Approach for the 2D Viscous MHD Flow About a Solid Particle**
Sellier A., AYDIN S. H., TEZER SEZGİN M.
ENUMATH 2015 European Conference on Numerical Mathematics and Advanced Applications, Ankara, Turkey, 14 - 18 September 2015, pp.114
- XXV. **Adaptive Mesh Generation Using Stabilized Finite Element Method**
AYDIN S. H., Erdoğan M. C.
ENUMATH 2015 European Conference on Numerical Mathematics and Advanced Applications, Ankara, Turkey, 14 - 18 September 2015, pp.95
- XXVI. **A new BEM approach for the slow 2D MHD flow about interacting solid particles**
Sellier A., AYDIN S. H., Tezer-Sezgin M.
BETEQ 2015, International Conference on Boundary Element and Meshless Techniques, Valencia, Spain, 6 - 08 July 2015, pp.126-132
- XXVII. **BEM Solution of MHD Pipe Flow Around a Conducting Cylindrical Solid and Inside an Insulating or Conducting Medium**
AYDIN S. H., TEZER SEZGİN M.
BETEQ 2014, International Conference on Boundary Element and Meshless Techniques, Floransa, Italy, 15 - 17 July 2014, pp.67-70
- XXVIII. **A New Boundary Approach for the 2D Slow Viscous MHD Flow of a Conducting Liquid About a Solid Particle**
AYDIN S. H., TEZER SEZGİN M., Sellier A.
BETEQ 2014, International Conference on Boundary Element and Meshless Techniques, Floransa, Italy, 15 - 17 July 2014, pp.98-101
- XXIX. **Stabilized FEM-BEM Solutions of MHD Flow in an Annular Pipe**
AYDIN S. H.
BETEQ 2014, International Conference on Boundary Element and Meshless Techniques, Floransa, Italy, 15 - 17 July 2014, pp.10-12
- XXX. **Upwind Finite Difference Solution of MHD Pipe Flow in an Exterior Conducting Region using Shishkin and Bakhvalov Typed Layer Adapted Grids**
AYDIN S. H.
PAMIR 2014, International Conference Fundamental and Applied MHD, Riga, Lithuania, 16 - 20 June 2014, pp.90-94
- XXXI. **FEM Solution of MHD Flow Equations Coupled on a Pipe Wall in a Conducting Medium**
AYDIN S. H., TEZER SEZGİN M.
PAMIR 2014, International Conference Fundamental and Applied MHD, Uppsala, Lithuania, 16 - 20 June 2014, pp.98-101
- XXXII. **The Method of Fundamental Solutions of MHD Pipe Flow in an Exterior Region**
AYDIN S. H.
BETEQ 2013, International Conference on Boundary Element and Meshless Techniques, Paris, France, 16 - 18 July 2013, pp.67-70
- XXXIII. **DRBEM Solution of MHD Pipe Flow in a Conducting Medium**
AYDIN S. H., TEZER SEZGİN M.
ICACM International Conference on Applied and Computational Mathematics, Ankara, Turkey, 3 - 06 October 2012, pp.67
- XXXIV. **Flow structures in an L-shaped cavity with the vertical motion of the upper lid**
AYDIN S. H., Deliceoglu A.
ICACM International Conference on Applied and Computational Mathematics, Ankara, Turkey, 3 - 06 October 2012,

pp.46

- XXXV. **BEM Solution of MHD Flow in a Pipe Coupled with Magnetic Induction of Exterior Region**
TEZER M., AYDIN S. H.
ESCO 2012,3rd European Seminar on Computing, 24 - 30 June 2012
- XXXVI. **The Finite Element Method Solution of Variable Diffusion Coefficient Convection-Diffusion Equations**
AYDIN S. H, Ciftci C.
1st International Conference on Analysis and Applied Mathematics (ICAAM), Gümüşhane, Turkey, 18 - 21 October 2012, vol.1470, pp.228-231
- XXXVII. **Flow simulation around obstacles of different geometries**
AYDIN S. H.
ICAAA 2011 International Conference on Applied Analysis and Algebra, İstanbul, Turkey, 29 June - 02 July 2011, pp.45
- XXXVIII. **Stabilized FEM Solution of Steady Natural Convection Flow in a Square Cavity**
Aydin S. H.
ICCAM 2010, The 15th edition of the International Congress on Computational and Applied Mathematics, Leuven, Belgium, 5 - 09 July 2010, pp.1
- XXXIX. **Flow bifurcation and eddy genesis in a L-shape cavity**
AYDIN S. H, Deliceoglu A.
ICAAA 2011 International Conference on Applied Analysis and Algebra, İstanbul, Turkey, 29 June 2009 - 02 July 2011, pp.55
- XL. **Solution of Navier-Stokes Equations Using FEM with Stabilizing Subgrid**
AYDIN S. H., Nesliturk A. I., TEZER SEZGİN M.
ENUMATH 2009, The 8th European Conference on Numerical Mathematics and Advanced ApplicationsENUMATH 2009, The 8th European Conference on Numerical Mathematics and Advanced Applications, Uppsala, Sweden, 29 June - 03 July 2009, pp.42-47
- XLI. **BEM Solution of MHD Flow in Ducts with Arbitrarily Conducting Walls**
AYDIN S. H.
UKBIM 6 Proceedings of the 6th UK Conference on Boundary Integral Methods, Durham, United Kingdom, 17 - 18 September 2007, pp.1-4
- XLII. **Dual Reciprocity BEM Solution of Grad-Shafranov Equation for the Distribution of Magnetic Flux in Nuclear Fusion Devices**
AYDIN S. H.
IABEM-2006 International Association for Boundary Element Methods 2006, Graz, Austria, 10 - 12 July 2006, pp.10-12
- XLIII. **Numerical Solution of MHD Flow Problems Using Boundary Element Method**
AYDIN S. H., TEZER SEZGİN M.
BEM/MRM 27 World Conf. On Boundary Elements and Other Mesh Reduction Methods, Orlando, United States Of America, 15 - 17 March 2005, pp.31-39

Metrics

Publication: 75

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Non Academic Experience

ECOLE POLYTECHNIQUE