

## Prof.Dr. SELÇUK HAN AYDIN

### Kişisel Bilgiler

İş Telefonu: [+90 462 377 2560](tel:+904623772560)

E-posta: shaydin@ktu.edu.tr

Web: <https://avesis.ktu.edu.tr//shaydin>

### Uluslararası Araştırmacı ID'leri

ScholarID: q-TGB24AAAAJ

ORCID: 0000-0002-1419-9458

Publons / Web Of Science ResearcherID: AAN-5781-2021

ScopusID: 00000014324165400

Yoksis Araştırmacı ID: 152588

### Eğitim Bilgileri

Doktora, Orta Doğu Teknik Üniversitesi, Uygulamalı Matematik Enstitüsü, Bilimsel Hesaplamalar, Türkiye 2004 - 2008

Yüksek Lisans, Orta Doğu Teknik Üniversitesi, Fen Bilimleri Enstitüsü, Matematik, Türkiye 1997 - 2000

Lisans, Orta Doğu Teknik Üniversitesi, Fen Edebiyat Fakültesi, Matematik, Türkiye 1992 - 1997

### Yabancı Diller

İngilizce, B2 Orta Üstü

### Yaptığı Tezler

Doktora, The finite element method over a simple stabilizing grid applied to fluid flow problems, Orta Doğu Teknik Üniversitesi, Uygulamalı Matematik Enstitüsü, Bilimsel Hesaplamalar, 2008

Yüksek Lisans, Dual reciprocity boundary element method for Poisson's equations using osculatory radial basis functions, Orta Doğu Teknik Üniversitesi, Fen Bilimleri Enstitüsü, Matematik, 2000

### Araştırma Alanları

Matematik, Diferansiyel denklemler, Kısmi diferansiyel eşitlikler, Sayısal Analiz, Temel Bilimler

### Akademik Unvanlar / Görevler

Prof.Dr., Karadeniz Teknik Üniversitesi, Fen Fakültesi, Matematik, 2018 - Devam Ediyor

Doç.Dr., Karadeniz Teknik Üniversitesi, Fen Fakültesi, Matematik, 2013 - 2018

Yrd.Doç.Dr., Karadeniz Teknik Üniversitesi, Fen Fakültesi, Matematik, 2009 - 2013

### Yönetilen Tezler

AYDIN S. H., Stabilize Sonlu Elemanlar Yöntemi İle Adaptif Ağ Oluşturma, Yüksek Lisans, M.Ceylan(Öğrenci), 2014  
AYDIN S. H., Değişken Difüzyon Katsayılı Konveksiyon-Difüzyon Denklemlerinin Sonlu Elemanlar Yöntemi ile Çözümü,  
Yüksek Lisans, C.ÇİFTÇİ(Öğrenci), 2012

## **SCI, SSCI ve AHCI İndekslerine Giren Dergilerde Yayınlanan Makaleler**

- I. **Stabilization in 3-D FEM and solution of the MHD equations**  
Aydin S. H., Erdoğan M.  
Mathematical Methods in the Applied Sciences, cilt.46, sa.12, ss.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, cilt.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, cilt.140, ss.519-530, 2022 (SCI-Expanded)
- IV. **Particle-particle interactions in axisymmetric MHD viscous flow**  
sellier a., AYDIN S. H.  
MAGNETOHYDRODYNAMICS, cilt.56, sa.2-3, ss.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, cilt.20, sa.1, ss.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, cilt.97, ss.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, cilt.87, ss.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, cilt.14, sa.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, cilt.53, sa.1, ss.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, cilt.102, sa.5, ss.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, sa.5, ss.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, cilt.259, ss.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, cilt.259, ss.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, cilt.95, sa.1, 2013 (SCI-Expanded)

- XV. **Flow bifurcation and eddy genesis in an L-shaped cavity**  
 DELİCEOĞLU A., AYDIN S. H.  
 COMPUTERS & FLUIDS, cilt.73, ss.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, cilt.84, sa.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, cilt.59, sa.10, ss.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, cilt.62, sa.2, ss.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, cilt.58, sa.5, ss.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, cilt.30, sa.5, ss.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, cilt.16, sa.1, ss.49-63, 2002 (SCI-Expanded)

## Diğer Dergilerde Yayınlanan Makaleler

- 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, cilt.72, sa.3, ss.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, cilt.44, sa.3, ss.547-560, 2023 (Hakemli Dergi)
- 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, cilt.68, sa.1, ss.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, cilt.27, ss.443-468, 2018 (ESCI)
- V. **Stabilized FEM Solution of Variable Coefficient Convection Diffusion Equation**  
 AYDIN S. H.  
 International Journal of Applied Mathematics, cilt.29, sa.3, ss.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, cilt.25, ss.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, cilt.3, ss.184-190, 2013 (Hakemli Dergi)
- 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., cilt.32, ss.265-275, 2008 (Hakemli Dergi)
- 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, cilt.32, sa.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, cilt.39, ss.453-461, 2005 (Hakemli Dergi)
- XI. **Numerical solution of magnetohydrodynamic flow problems using boundary element method**  
AYDIN S. H., TEZER SEZGİN M.  
WIT Transaction on Modeling and Simulation, cilt.39, ss.31-39, 2005 (Hakemli Dergi)

### Hakemli Kongre / Sempozyum Bildiri Kitaplarında Yer Alan Yayınlar

- 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, Balıkesir, Türkiye, 1 - 03 Eylül 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, Balıkesir, Türkiye, 1 - 03 Eylül 2021
- III. **3-D MHD Flow Over Array of Cubic Ducts**  
AYDIN S. H.  
ICAME'21, International Conference on Applied Mathematics in Engineering, Balıkesir, Türkiye, 1 - 03 Eylül 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, İtalya, 22 - 27 Ağustos 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, Türkiye, 5 - 07 Temmuz 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, Türkiye, 5 - 07 Temmuz 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, İtalya, 22 - 29 Temmuz 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, İspanya, 9 - 13 Temmuz 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, İspanya, 9 - 13 Temmuz 2018

**X. Paritcle-wall interactions axisymmetric MHD viscous**

sellier a., AYDIN S. H.

BETEQ 2018, International Conference on Boundary Element and Meshless Techniques, 9 - 11 Temmuz 2018

**XI. Particle-particle interactions in axisymmetric MHD creeping flow**

AYDIN S. H., sellier a.

IABEM 2018, 26 - 28 Haziran 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, Fransa, 26 - 28 Haziran 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, Kıbrıs (Kktc), 4 - 06 Mayıs 2018

**XIV. Particle-particle interactions in axisymmetric MHD viscous flow**

AYDIN S. H., SELLIER A.

BETEQ 2017, Bükreş, Romanya, 11 - 13 Temmuz 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, Bükreş, Romanya, 11 - 13 Temmuz 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, Bükreş, Romanya, 11 - 13 Temmuz 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 Mart 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, Brezilya, 19 - 22 Mart 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 Temmuz 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 Temmuz 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 Haziran 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 Haziran 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 Haziran 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, Türkiye, 14 - 18 Eylül 2015, ss.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, Türkiye, 14 - 18 Eylül 2015, ss.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, İspanya, 6 - 08 Temmuz 2015, ss.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, İtalya, 15 - 17 Temmuz 2014, ss.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, İtalya, 15 - 17 Temmuz 2014, ss.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, İtalya, 15 - 17 Temmuz 2014, ss.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, Litvanya, 16 - 20 Haziran 2014, ss.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, Litvanya, 16 - 20 Haziran 2014, ss.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, Fransa, 16 - 18 Temmuz 2013, ss.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, Türkiye, 3 - 06 Ekim 2012, ss.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, Türkiye, 3 - 06 Ekim 2012, ss.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 Haziran 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, Türkiye, 18 - 21 Ekim 2012, cilt.1470, ss.228-231
- XXXVII. **Flow simulation around obstacles of different geometries**  
AYDIN S. H.  
ICAAA 2011 International Conference on Applied Analysis and Algebra, İstanbul, Türkiye, 29 Haziran - 02 Temmuz 2011, ss.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, Belçika, 5 - 09 Temmuz 2010, ss.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, Türkiye, 29 Haziran 2009 - 02 Temmuz 2011, ss.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, İsveç, 29 Haziran - 03 Temmuz 2009, ss.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, Birleşik Krallık, 17 - 18 Eylül 2007, ss.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, Avusturya, 10 - 12 Temmuz 2006, ss.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, Amerika Birleşik Devletleri, 15 - 17 Mart 2005, ss.31-39

## Metrikler

Yayın: 75

Atıf (WoS): 166

Atıf (Scopus): 174

H-İndeks (WoS): 7

H-İndeks (Scopus): 8

## Akademi Dışı Deneyim

ECOLE POLYTECHNIQUE