

## Assoc. Prof. MEHMET TARIK ATAY

### Personal Information

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### Education Information

Doctorate, Orta Doğu Teknik Üniversitesi, Mühendislik Fakültesi, Mühendislik Bilimleri, Turkey 1999 - 2005

Postgraduate, Illinois Institute Of Technology, College Of Science, Master Of Applied Mathematics, United States Of America 1993 - 1996

Undergraduate, Orta Doğu Teknik Üniversitesi, Fen Edebiyat Fakültesi, Matematik, Turkey 1986 - 1993

### Foreign Languages

English, C1 Advanced

### Dissertations

Doctorate, Üç katmanlı elastik panelin çatlaması, Orta Doğu Teknik Üniversitesi, Mühendislik Fakültesi, Mühendislik Bilimleri Bölümü, 2005

Postgraduate, Automatic Differentiation by Using VODE, Illinois Institute Of Technology, College Of Science, Master Of Science In Applied Mathematics, 1996

### Research Areas

Mechanical Engineering, Mechanical, Solid Mechanics, Mathematics, Differential Equations, Numerical Analysis, Natural Sciences, Engineering and Technology

### Academic Titles / Tasks

Assistant Professor, Abdullah Gül Üniversitesi, Mühendislik Fakültesi, Makine Mühendisliği Bölümü, 2018 - Continues

Assistant Professor, Abdullah Gül Üniversitesi, Mühendislik Fakültesi, Makine Mühendisliği Bölümü, 2014 - 2018

Assistant Professor, Niğde Üniversitesi, Fen Edebiyat Fakültesi, Matematik Bölümü, 2008 - 2014

Lecturer PhD, Niğde Üniversitesi, Fen Edebiyat Fakültesi, Matematik Bölümü, 2006 - 2008

Research Assistant, Orta Doğu Teknik Üniversitesi, Mühendislik Fakültesi, Mühendislik Bilimleri Bölümü, 1998 - 2006

Research Assistant, Niğde Üniversitesi, Fen Edebiyat Fakültesi, Matematik Bölümü, 1993 - 1998

### Articles Published in Journals That Entered SCI, SSCI and AHCI Indexes

- Solution of jamming transition problem using adomian decomposition method**  
ŞENTÜRK E., COŞKUN S. B., ATAY M. T.  
ENGINEERING COMPUTATIONS, vol.35, no.5, pp.1950-1964, 2018 (Journal Indexed in SCI)

- II. **A uniformly valid approximation algorithm for nonlinear ordinary singular perturbation problems with boundary layer solutions**  
Cengizci S., ATAY M. T. , Eryilmaz A.  
SPRINGERPLUS, vol.5, 2016 (Journal Indexed in SCI)
- III. **Magnus series expansion method for solving nonhomogeneous stiff systems of ordinary differential equations**  
ATAY M. T. , Eryilmaz A., Komez S.  
KUWAIT JOURNAL OF SCIENCE, vol.43, no.1, pp.25-38, 2016 (Journal Indexed in SCI)
- IV. **The Semianalytical Solutions for Stiff Systems of Ordinary Differential Equations by Using Variational Iteration Method and Modified Variational Iteration Method with Comparison to Exact Solutions**  
Atay M. T. , KILIC O.  
MATHEMATICAL PROBLEMS IN ENGINEERING, 2013 (Journal Indexed in SCI)
- V. **Buckling of Euler Columns with a Continuous Elastic Restraint via Homotopy Analysis Method**  
Eryilmaz A., Atay M. T. , COŞKUN S. B. , Basbuk M.  
JOURNAL OF APPLIED MATHEMATICS, 2013 (Journal Indexed in SCI)
- VI. **A novel hybrid method for better evaluation: Evaluating university instructors teaching performance by combining conventional content analysis with fuzzy rule based systems**  
BASARAN M. A. , Kalayci N., Atay M. T.  
EXPERT SYSTEMS WITH APPLICATIONS, vol.38, no.10, pp.12565-12568, 2011 (Journal Indexed in SCI)
- VII. **Determination of Buckling Loads and Mode Shapes of a Heavy Vertical Column under its Own Weight Using the Variational Iteration Method**  
Okay F., Atay M. T. , COŞKUN S. B.  
INTERNATIONAL JOURNAL OF NONLINEAR SCIENCES AND NUMERICAL SIMULATION, vol.11, no.10, pp.851-857, 2010 (Journal Indexed in SCI)
- VIII. **Determination of Buckling Loads of Tilted Buckled Column with Varying Flexural Rigidity Using Variational Iteration Method**  
Atay M. T.  
INTERNATIONAL JOURNAL OF NONLINEAR SCIENCES AND NUMERICAL SIMULATION, vol.11, no.2, pp.97-103, 2010 (Journal Indexed in SCI)
- IX. **Computation of Eigenvalues of Sturm-Liouville Problems using Homotopy Perturbation Method**  
Atay M. T. , Kartal S.  
INTERNATIONAL JOURNAL OF NONLINEAR SCIENCES AND NUMERICAL SIMULATION, vol.11, no.2, pp.105-111, 2010 (Journal Indexed in SCI)
- X. **Elastic stability of Euler columns with a continuous elastic restraint using variational iteration method**  
Atay M. T. , COSKUN S. B.  
COMPUTERS & MATHEMATICS WITH APPLICATIONS, vol.58, pp.2528-2534, 2009 (Journal Indexed in SCI)
- XI. **Determination of critical buckling load for elastic columns of constant and variable cross-sections using variational iteration method**  
COSKUN S. B. , Atay M. T.  
COMPUTERS & MATHEMATICS WITH APPLICATIONS, vol.58, pp.2260-2266, 2009 (Journal Indexed in SCI)
- XII. **Determination of Critical Buckling Loads for Variable Stiffness Euler Columns Using Homotopy Perturbation Method**  
Atay M. T.  
INTERNATIONAL JOURNAL OF NONLINEAR SCIENCES AND NUMERICAL SIMULATION, vol.10, no.2, pp.199-206, 2009 (Journal Indexed in SCI)
- XIII. **Fin efficiency analysis of convective straight fins with temperature dependent thermal conductivity using variational iteration method**  
COSKUN S. B. , Atay M. T.  
APPLIED THERMAL ENGINEERING, vol.28, pp.2345-2352, 2008 (Journal Indexed in SCI)

- XIV. **Comparative Analysis of Power-Law Fin-Type Problems Using Variational Iteration Method and Finite Element Method**  
Atay M. T. , COSKUN S. B.  
MATHEMATICAL PROBLEMS IN ENGINEERING, 2008 (Journal Indexed in SCI)
- XV. **Effects of nonlinearity on the variational iteration solutions of nonlinear two-point boundary value problems with comparison with respect to finite element analysis**  
Atay M. T. , COSKUN S. B.  
MATHEMATICAL PROBLEMS IN ENGINEERING, 2008 (Journal Indexed in SCI)

### Articles Published in Other Journals

- I. **Numerical Analysis of Stiff Differential Equations via Interpolated Variational Iteration Method**  
ATAY M. T. , ŞAŞ ÇAYCI H. S. , ÇİFTÇİ C. , COŞKUN S. B. , TOKER B. , YILDIRIM A. T.  
Journal of Basic and Applied Research International, vol.24, no.1, pp.15-24, 2018 (Refereed Journals of Other Institutions)
- II. **A Geometric Integration Based on Magnus Series Expansion for Human T-Cell Lymphotropic Virus I (HTLV-I) Infection of CD4+ T-Cells Model**  
ATAY M. T. , BAŞBÜK M. , ERYILMAZ A.  
Journal of Advances in Applied Mathematics, vol.1, no.2, 2016 (Refereed Journals of Other Institutions)
- III. **Vibration analysis of a mass on a spring by means of magnus expansion method**  
BAŞBÜK M. , ERYILMAZ A. , ATAY M. T.  
New Trends in Mathematical Sciences, vol.4, no.2, pp.90-112, 2016 (Refereed Journals of Other Institutions)
- IV. **A numerical approximation to some specific nonlinear differential equations using magnus series expansion method**  
KÖME S. , ERYILMAZ A. , ATAY M. T.  
New Trends in Mathematical Sciences, vol.4, no.1, pp.125, 2016 (Refereed Journals of Other Institutions)
- V. **SCEM approach for singularly perturbed linear turning mid-point problems with an interior layer**  
ATAY M. T. , CENGİZCİ S. , ERYILMAZ A.  
New Trends in Mathematical Sciences, vol.4, no.1, pp.115, 2016 (Refereed Journals of Other Institutions)
- VI. **On Critical Buckling Loads Of Euler Columns With Elastic End Restraints**  
Başbük M. , ERYILMAZ A. , COŞKUN S. B. , ATAY M. T.  
Hittite Journal of Science and Engineering, vol.3, no.1, pp.9-14, 2016 (Refereed Journals of Other Institutions)
- VII. **Comparative numerical solutions of stiff ordinary differential equations using Magnus series expansion method**  
KÖME S. , ATAY M. T. , ERYILMAZ A. , KÖME C. , PIIPPONEN S.  
New Trends in Mathematical Sciences, vol.3, no.1, pp.35-45, 2015 (Refereed Journals of Other Institutions)
- VIII. **On Critical Buckling Loads of Columns under End Load Dependent on Direction**  
Başbük M. , ERYILMAZ A. , ATAY M. T.  
International Scholarly Research Notices, vol.2014, pp.1-6, 2014 (Refereed Journals of Other Institutions)

### Books & Book Chapters

- I. **Yükseköğretimde Eğitim Programı Geliştirme: Öğretim Üyeleri Tarafından Yürütülen Süreçler ve Uygulamalar**  
KALAYCI ATAY N. , ATAY M. T.  
Edge Akademi, 2015

### Refereed Congress / Symposium Publications in Proceedings

- I. **Is Civil Engineering Education at Kocaeli University Helping Students Realize Their Potentialities?**  
ERDOĞAN H., GAZELOĞLU C., COŞKUN S. B. , MERT KUTSAL S., ATAY M. T. , ENGİN S.  
13th International Congress on Advances in Civil Engineering, İzmir, Turkey, 12 - 14 September 2018
- II. **Twist-Bend Instability of a Cantilever Beam Subjected to an End Load via Homotopy Perturbation Method**  
Yucesoy A., COŞKUN S. B. , ATAY M. T.  
International Conference of Numerical Analysis and Applied Mathematics (ICNAAM), Thessaloniki, Greece, 25 - 30 September 2017, vol.1978
- III. **The Numerical Solutions for Stiff Ordinary Differential Equations by Using Interpolated Variational Iteration Method with Comparison to Exact Solutions**  
ÇİFTÇİ C., ŞAŞ ÇAYCI H. S. , ATAY M. T. , Toker B., Guncan B., Yildirim A. T.  
International Conference of Numerical Analysis and Applied Mathematics (ICNAAM), Thessaloniki, Greece, 25 - 30 September 2017, vol.1978
- IV. **The Numerical Solutions for Stiff Ordinary Differential Equations by Using Interpolated Variational Iteration Method with Comparison to Exact Solution**  
ÇİFTÇİ C., ŞAŞ H. S. , ATAY M. T. , Toker B., Günçan B., Yıldırım A. T.  
15th INTERNATIONAL CONFERENCE OF NUMERICAL ANALYSIS AND APPLIED MATHEMATICS 2017, Thessaloniki, Greece, 25 - 30 September 2017
- V. **A Uniformly Valid Approximation Algorithm for Singularly Perturbed two point boundary value problems in nonlinear ordinary differential equations**  
CENGİZCİ S., ATAY M. T. , ERYILMAZ A.  
INTERNATION CONFERENCE ON ADVANCEMENT IN MATHEMATICAL SCIENCE, 5 - 07 November 2015
- VI. **Magnus Expansion Method for Solving Singularly Perturbed Turning Point Problems Having Boundary Layers**  
sure k, ATAY M. T. , ERYILMAZ A., KÖME C.  
ICNAAM 2014- Book Series: AIP Conference Proceedings, 5 - 07 January 2015
- VII. **Numerical Solutions of Linear and Nonlinear Lane Emden Type Equations Magnus Expansion Method**  
KÖME C., ATAY M. T. , ERYILMAZ A., köme s.  
ICNAAM 2014 - Book Series: AIP Conference Proceedings, Rhodes, Greece, 5 - 07 January 2015
- VIII. **Elastic Stability Analysis of uniform Euler Columns with and without self weight by means of Homotopy Analysis Method**  
ERYILMAZ A., COŞKUN S. B. , ATAY M. T. , BAŞBÜK M.  
The Algerian-Turkish International Days on Mathematics, İstanbul, Turkey, 12 - 14 September 2013
- IX. **The semi analytical solutions for HIV and Fatal disease models by using variational iteration method and modified variational iteration methods**  
ATAY M. T. , KILIÇ O.  
2nd International Conference on Computation for Science and Technology, Turkey, 9 - 11 July 2012
- X. **Computation of Eigenvalues of Sturm Liouville Problems by means of Homotopy Analysis Method A Versatile Approach**  
ERYILMAZ A., ATAY M. T. , KARTAL Ş.  
International Conference on Applied Analysis and Algebra, İstanbul, Turkey, 30 June - 02 July 2011
- XI. **Analysis of Convective Fins And Space Radiators with Temperature Dependent Thermal Conductivity Using Variational Iteration Method**  
ATAY M. T. , COŞKUN S. B.  
21st Canadian Congress of Applied Mechanics, Canada, 30 June - 02 July 2011, vol.2007, pp.1-15
- XII. **Homotopy perturbation method for free vibration analysis of beams on elastic foundation**  
OZTURK B., COŞKUN S. B. , Koc M. Z. , Atay M. T.  
9th World Congress on Computational Mechanics/4th Asian Pacific Congress on Computational Mechanics, Sydney, Australia, 19 - 23 July 2010, vol.10

## Citations

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