

## Prof. SİNAN EYİ

### Personal Information

**Office Phone:** [+90 031 221 0428](tel:+900312210428) Extension: 3

**Email:** [seyi@metu.edu.tr](mailto:seyi@metu.edu.tr)

**Web:** <https://avesis.metu.edu.tr/seyi>

### International Researcher IDs

ScholarID: Ozo0vG0AAAAJ

ORCID: 0000-0002-7380-0733

Publons / Web Of Science ResearcherID: AAC-8165-2020

ScopusID: 6603288394

Yoksis Researcher ID: 165077

### Education

Post Doctorate, University of Illinois at Urbana-Champaign, Mühendislik, Havacılık ve Uzay Mühendisliği, United States Of America 1995 - 1996

Doctorate, University of Illinois at Urbana-Champaign, Mühendislik, Havacılık ve Uzay Mühendisliği, United States Of America 1990 - 1995

Postgraduate, University of Illinois at Urbana-Champaign, Mühendislik, Havacılık ve Uzay Mühendisliği, United States Of America 1987 - 1990

Undergraduate Minor, Karadeniz Technical University, Mühendislik Fakültesi, Makine Mühendisliği, Turkey 1977 - 1982

### Foreign Languages

English, B2 Upper Intermediate

### Research Areas

Engineering and Technology

### Academic Positions

Professor, Middle East Technical University, Faculty of Engineering, Department of Aerospace Engineering, 2019 - Continues

### Supervised Theses

EYİ S., Convergence performance of the approximate factorization methods with multi-block implicit boundary conditions at hypersonic speeds, Postgraduate, M.KOCA(Student), 2022

UĞUR Ö., EYİ S., Loose coupling of SU2 multiphysics code with pato to analyze the surface recession effect on surface heat flux, Postgraduate, M.ÇELİK(Student), 2022

EYİ S., Development of a design method for subsonic intakes with improved aerodynamic performance and reduced

radar signature, Postgraduate, T.ÜNLÜ(Student), 2021

EYİ S., MONTAJLANMIŞ MOTORUN ATALETSEL PARÇACIK AYRIŞTIRICISININ SAYISAL ANALİZİ, Postgraduate, A.BURAK(Student), 2021

EYİ S., Ablation modeling for high speed internal and external flows, Doctorate, O.Kaan(Student), 2020

EYİ S., Development and evaluation of new bleed boundary condition models for supersonic inlet boundary layer bleed flow, Postgraduate, G.Akar(Student), 2019

EYİ S., Aerothermodynamic shape optimization using DSMC and POD-RBF methods, Postgraduate, H.KUTKAN(Student), 2018

EYİ S., Analysis, design and test of a jet vane based thrust vector control for tactical missiles, Postgraduate, O.EREN(Student), 2017

EYİ S., Conceptual aerodynamic design of ramjet missiles, Postgraduate, E.DEMİRAL(Student), 2017

EYİ S., Aerodynamic design optimization using 3-dimensional Euler equations and adjoint method, Postgraduate, A.YILDIRIM(Student), 2017

EYİ S., Analysis of hypersonic flow using three dimensional navier-stokes equations, Postgraduate, M.Özgün(Student), 2016

EYİ S., Effects of diffusion in hypersonic flow, Postgraduate, H.BERK(Student), 2016

EYİ S., Analysis of hypersonic flow using three dimensional Navier-Stokes equations, Postgraduate, M.ÖZGÜN(Student), 2016

EYİ S., Three dimensional reacting flow analysis of a cavity-based scramjet combustor, Postgraduate, R.ROUZBAR(Student), 2016

EYİ S., Choice and development of a preconditioner for Newton-GMRES algorithm, Postgraduate, Y.EMRE(Student), 2015

EYİ S., CFD analysis of missile shroud separation, Postgraduate, H.ERKAN(Student), 2015

EYİ S., Analysis of weakly ionized hypersonic flow, Postgraduate, T.PIŞKİN(Student), 2015

EYİ S., Subsonic-transonic submerged intake design for a cruise missile, Postgraduate, O.AKMAN(Student), 2014

EYİ S., The effects of static aeroelasticity on the performance of two-dimensional converging diverging nozzles, Postgraduate, Ü.DÜZEL(Student), 2014

EYİ S., Performance comparison of newton and Newton-GMRES methods in 3-D flow analysis, Postgraduate, B.YILDIZLAR(Student), 2014

EYİ S., Numerical simulation of hydrodynamic planar motion mechanism test for underwater vehicles, Postgraduate, M.CAN(Student), 2014

EYİ S., Numerical simulation of hydrodynamic planar motion mechanism test for underwater vehicles, Postgraduate, M.Can(Student), 2014

EYİ S., Performance analyses of newton method for multi-block structured grids, Postgraduate, E.AYAN(Student), 2011

EYİ S., Performance analyses of newton method for multi-block structured grids, Postgraduate, E.Ayan(Student), 2011

EYİ S., Sensitivity analysis using finite difference and analytical jacobians, Postgraduate, A.ALPER(Student), 2009

EYİ S., Free flexural (or bending) vibrations analysis of certain groups of stiffened composite plates or panels-In flight vehicle structures, Postgraduate, J.JAVANSHİR(Student), 2009

EYİ S., Accuracy and efficiency improvements in finite difference sensitivity calculations, Postgraduate, M.Özhamam(Student), 2007

EYİ S., Accuracy and efficiency in finite difference sensitivity calculations, Postgraduate, M.ÖZHAMAM(Student), 2007

EYİ S., Parallel navier stokes solutions of low aspect ratio rectangular flat wings in compressible, Doctorate, G.DURMUŞ(Student), 2004

EYİ S., Parallel navier stokes solutions of low aspect ratio rectangular flat wings in compressible flow, Doctorate, G.Durmuş(Student), 2004

EYİ S., Effect of the Jacobian evaluation on direct solutions of the Euler equations, Postgraduate, Ö.ONUR(Student), 2003

EYİ S., Effect of the Jacobian evaluation on direct solutions of the Euler equations, Postgraduate, Ö.Onur(Student), 2003

EYİ S., Performance evaluation and improvements of inverse compressor cascade design, Postgraduate, B.KAPLAN(Student), 2000

ÇIRAY C., EYİ S., A trial for new turbulence model for low reynolds number turbulent boundary layer, Postgraduate, S.Kilerci(Student), 2000

EYİ S., Sensitivity analysis in turbomachinery cascade design optimization, Postgraduate, İ.ERGÜN(Student), 2000

EYİ S., A Trial for a new turbulence model for low reynolds number turbulent boundary layer, Postgraduate, S.KİLERCİ(Student), 2000

### **Journal articles indexed in SCI, SSCI, and AHCI**

- I. **Ablation Analyses of Optimized Nose Tips for Hypersonic Vehicles**  
Onay O. K., EYİ S.  
JOURNAL OF THERMOPHYSICS AND HEAT TRANSFER, vol.34, no.1, pp.78-89, 2020 (SCI-Expanded)
- II. **Shape Optimization of Reentry Vehicles to Minimize Heat Loading**  
Eyi S., Hanquist K. M., Boyd I. D.  
JOURNAL OF THERMOPHYSICS AND HEAT TRANSFER, vol.33, no.3, pp.785-796, 2019 (SCI-Expanded)
- III. **Aerothermodynamic Design Optimization of Hypersonic Vehicles**  
Eyi S., Hanquist K. M., Boyd I. D.  
JOURNAL OF THERMOPHYSICS AND HEAT TRANSFER, vol.33, no.2, pp.392-406, 2019 (SCI-Expanded)
- IV. **Reacting flow analysis of a cavity-based scramjet combustor using a Jacobian-free Newton-Krylov method**  
Rouzbar R., EYİ S.  
AERONAUTICAL JOURNAL, vol.122, no.1258, pp.1884-1915, 2018 (SCI-Expanded)
- V. **Aerothermodynamic shape optimization of hypersonic blunt bodies**  
EYİ S., Yumusak M.  
ENGINEERING OPTIMIZATION, vol.47, no.7, pp.909-926, 2015 (SCI-Expanded)
- VI. **Convergence Error and Higher-Order Sensitivity Estimations**  
Eyi S.  
AIAA JOURNAL, vol.50, no.10, pp.2219-2234, 2012 (SCI-Expanded)
- VII. **Design optimization of rocket nozzles in chemically reacting flows**  
Yumusak M., EYİ S.  
COMPUTERS & FLUIDS, vol.65, pp.25-34, 2012 (SCI-Expanded)
- VIII. **Effects of sensitivity derivatives on aerodynamic design optimization**  
Eyi S.  
Inverse Problems In Science And Engineering, vol.2, no.1996, pp.213-235, 2007 (SCI-Expanded)
- IX. **Effects of the Jacobian evaluation on Newton's solution of the Euler equations**  
Onur O., Eyi S.  
INTERNATIONAL JOURNAL FOR NUMERICAL METHODS IN FLUIDS, vol.49, no.2, pp.211-231, 2005 (SCI-Expanded)
- X. **Inverse airfoil design using the Navier Stokes equations**  
Eyi S., Lee K.  
ENGINEERING OPTIMIZATION, vol.28, no.4, pp.245-262, 1997 (SCI-Expanded)
- XI. **High-lift design optimization using Navier-Stokes equations**  
Eyi S., Lee K., Rogers S., Kwak D.  
JOURNAL OF AIRCRAFT, vol.33, no.3, pp.499-504, 1996 (SCI-Expanded)
- XII. **AIRFOIL DESIGN OPTIMIZATION USING THE NAVIER-STOKES EQUATIONS**  
EYI S., HAGER J., LEE K.  
JOURNAL OF OPTIMIZATION THEORY AND APPLICATIONS, vol.83, no.3, pp.447-461, 1994 (SCI-Expanded)
- XIII. **2-POINT TRANSONIC AIRFOIL DESIGN USING OPTIMIZATION FOR IMPROVED OFF-DESIGN PERFORMANCE**  
HAGER J., EYI S., LEE K.  
JOURNAL OF AIRCRAFT, vol.31, no.5, pp.1143-1147, 1994 (SCI-Expanded)
- XIV. **TRANSONIC AIRFOIL DESIGN BY CONSTRAINED OPTIMIZATION**  
LEE K., EYI S.  
JOURNAL OF AIRCRAFT, vol.30, no.6, pp.805-806, 1993 (SCI-Expanded)
- XV. **AERODYNAMIC DESIGN VIA OPTIMIZATION**

## Articles Published in Other Journals

I. **ATMOSFERİK GEÇİŞ YAPAN ARAÇ ETRAFINDA NAVIER-STOKESDENKLEMLERİ İLE ÜÇ BOYUTLU HİPERSONİK AKIŞ ANALİZİ**

Özgün M., EYİ S.

Havacılık ve Uzay Teknolojileri Dergisi, vol.7, pp.71-77, 2014 (Peer-Reviewed Journal)

## Papers Presented at Peer-Reviewed Scientific Conferences

I. **ROKET KALKIŞ RAMPALARINDA EĞİM AÇISININ VE GEOMETRİNİN ETKİSİNİN İNCELENMESİ**

Yahya L., Soylu Z. S., Eyi S.

10. ULUSAL HAVACILIK ve UZAY KONFERANSI, Ankara, Turkey, 18 - 20 September 2024, pp.1-11

II. **FIRLATMA RAMPALARINDA ATEŞLEME AŞIRI BASINÇ DALGALARININ HAD ANALİZİ**

Duru M. Ö., Eyi S.

10. ULUSAL HAVACILIK ve UZAY KONFERANSI, Ankara, Turkey, 18 - 20 September 2024, pp.1-10

III. **BEŞİNCİ NESİL BİR SAVAŞ UÇAĞININ KAVRAMSAL TASARIMI: UÇUŞ MEKANİĞİ YAKLAŞIMI**

Kırkar A., Eyi S.

10. ULUSAL HAVACILIK ve UZAY KONFERANSI, Ankara, Turkey, 18 - 20 September 2024, pp.1-11

IV. **Ignition Overpressure Analyses of Launch Pads at Different Deflector Angles**

İriolya T. G., Eyi S.

12. International Conference on Computational Fluid Dynamics (ICCFD12), Kobe, Japan, 14 - 19 July 2024, no.6, pp.1-22

V. **HIGH-FIDELITY NUMERICAL INVESTIGATION OF A HIGH PRESSURE TURBINE COOLED VANE**

Gokenis F., Peneklioglu K., Oksuz O., Erdem E., EYİ S.

69th ASME Turbo Expo 2024: Turbomachinery Technical Conference and Exposition, GT 2024, London, England, 24 - 28 June 2024, vol.13

VI. **Numerical Modeling of Hypersonic Air and Carbon Dioxide Flows in Thermochemical Non-Equilibrium with SU2-NEMO Solver**

Çelik M., Uğur Ö., Eyi S.

The 2nd International Conference on Flight Vehicles, Aerothermodynamics and Re-entry Missions Engineering (FAR), Heilbronn, Germany, 19 - 23 June 2022, pp.1-6

VII. **Computational modelling and analysis of porous bleed holes at supersonic speeds**

Akar G., EYİ S.

AIAA Propulsion and Energy 2020 Forum, Virtual, Online, 24 - 28 August 2020, pp.1-10

VIII. **Integrated Shap Optimization of RAE-M2129 Inlet for Aerodynamic Performance and Reduced Radar Cross Section**

Unlu T., Atasoy M., Dincer E., EYİ S.

10th Ankara International Aerospace Conference, Ankara, Turkey, 18 - 20 September 2019, vol.10

IX. **Comparison of Fully Coupled and Decoupled Modeling Results of Graphite Ablation In Hypersonic Flows**

Onay O., EYİ S.

10th Ankara International Aerospace Conference, Ankara, Turkey, 18 - 20 September 2019, vol.10, (Full Text)

X. **Shape Optimization of Reentry Vehicles to Minimize Heat Loading**

EYİ S., Hanquist K. M., Boyd I. D.

2019 AIAA Scitech Forum, San Diego, CA USA, 7 - 11 January 2019, vol.2019, (Full Text)

XI. **Gözenekli Tahliye Sistemlerinin Ses-üstü Hızlarda Hesaplamalı Akışkanlar Dinamiği ile Analizleri**

- Akar G., EYİ S.  
VII. Ulusal Havacılık Ve Uzay Konferansı, Turkey, 12 - 14 September 2018, vol.2018
- XII. **Aerothermodynamic Shape Optimization of Reentry Capsules Using DSMC and POD Methods**  
Kutkan H., EYİ S.  
10th INTERNATIONAL CONFERENCE ON COMPUTATIONAL FLUID DYNAMICS, 9 - 13 July 2018, vol.10
- XIII. **Aerothermodynamic Shape Optimization of Reentry Capsule**  
Kutkan H., EYİ S.  
2018 Joint Thermophysics and Heat Transfer Conference, Atlanta, Georgia, 25 - 29 June 2018, vol.2018
- XIV. **CFD Analyses of Hypersonic Flow Regimes with Stephan-Maxwell Diffusion Equation**  
Gür B., EYİ S.  
2018 Fluid Dynamics Conference, Atlanta, Georgia, 25 - 29 June 2018, vol.2018
- XV. **Transient Thermochemical Erosion Modeling for Solid Propellant Rocket Motor Nozzles Including the Effect of Shape Change and Anisotropy**  
Onay O., EYİ S.  
2018 Fluid Dynamics Conference, Atlanta, Georgia, 25 - 29 June 2018, vol.2018, (Full Text)
- XVI. **Aerothermodynamic Design Optimization of Hypersonic Vehicles**  
EYİ S., Hanquist K. M., Boyd I. D.  
2018 Multidisciplinary Analysis and Optimization Conference, Atlanta, Georgia, 25 - 29 June 2018, vol.2018
- XVII. **Multi Block and Parallel Computations of Rotor Fan Using Three Dimensional Euler Equations**  
Özmen E., EYİ S.  
2018 Fluid Dynamics Conference, Atlanta, Georgia, 25 - 29 June 2018, vol.2018
- XVIII. **CFD Analysis of Diffusion Phenomena in Hypersonic Flow Regimes**  
Gür B., EYİ S.  
26th Annual Conference of the Computational Fluid Dynamics Society of Canada Winnipeg, 10 - 12 June 2018, vol.26
- XIX. **Simulations of hypersonic flow regions with Fick's law of diffusion with addition of different diffusivity models**  
Gur H. B., EYİ S.  
AIAA Aerospace Sciences Meeting, 2018, Florida, United States Of America, 8 - 12 January 2018
- XX. **Diffusion Models Implementation in Hypersonic Flow Regimes**  
Gür B., EYİ S.  
9th Ankara International Aerospace Conference, 20 - 22 September 2017, vol.2017
- XXI. **Analysis of effects of different diffusion models in hypersonic flow regimes**  
Gur H. B., EYİ S.  
8th AIAA Theoretical Fluid Mechanics Conference, 2017, Colorado, United States Of America, 5 - 09 June 2017
- XXII. **Aerodynamic optimization of wing-body configuration using discrete adjoint method**  
YILDIRIM A., EYİ S.  
35th AIAA Applied Aerodynamics Conference, 2017, Colorado, United States Of America, 5 - 09 June 2017
- XXIII. **Three Dimensional Design Optimization Using Adjoint Method with Newton Krylov Solver**  
Yıldırım A., EYİ S.  
52nd AIAA/SAE/ASEE Joint Propulsion Conference, Salt Lake City, UT, 25 - 27 July 2016, vol.2016
- XXIV. **Scramjet Combustor Flow Analysis Using Coupled Navier-Stokes and Finite Rate Chemical Equations**  
Rouzbar R., EYİ S.  
46th AIAA Fluid Dynamics Conference, Washington, Kiribati, 13 - 17 July 2016, vol.2016
- XXV. **Adjoint Shape Optimization of Hypersonic Blunt Bodies Including the Effect of Graphite Ablation**  
Onay O., EYİ S.  
Ninth International Conference on Computational Fluid Dynamics (ICCFD9), 11 - 15 July 2016, vol.9
- XXVI. **Three Dimensional Hypersonic Flow Analysis Around a Reentry Vehicle Using Navier-Stokes Equations**  
Özgün M., EYİ S.  
Ninth International Conference on Computational Fluid Dynamics (ICCFD9), 11 - 15 July 2016, vol.9

- XXVII. **Three Dimensional Design Optimization Using Adjoint Method**  
Yıldırım A., EYİ S.  
34th AIAA Applied Aerodynamics Conference, Washington, Kiribati, 13 - 17 June 2016, vol.2016
- XXVIII. **Convergence Acceleration Based on Eigenvalue Analysis**  
EYİ S.  
46th AIAA Fluid Dynamics Conference, Washington, Kiribati, 13 - 17 June 2016, vol.2016, (Full Text)
- XXIX. **Modelling Thermochemical Nonequilibrium during Atmospheric Re-Entry**  
Pişkin T., EYİ S.  
51st AIAA/SAE/ASEE Joint Propulsion Conference, Orlando, FL, 27 August - 27 September 2015, vol.2015, (Full Text)
- XXX. **Hypersonic Flow Analysis of Re-entry Vehicles Using Three Dimensional Navier-Stokes Equations**  
Özgün M., EYİ S.  
13th International Energy Conversion Engineering Conference, Orlando, FL, 27 July 2015 - 29 July 2015, vol.2015
- XXXI. **Diffusion Effect on Hypersonic Flow Using Fick's Law**  
Gür B., EYİ S.  
13th International Energy Conversion Engineering Conference, Orlando, FL, 27 - 29 July 2015, vol.2015
- XXXII. **Implicit Solution of One-Dimensional Transient Ablation**  
Onay O., EYİ S.  
13th International Energy Conversion Engineering Conference, Orlando, FL, 27 July 2015 - 29 July 2015, vol.2015
- XXXIII. **Simulations of Ethylene and Hydrogen Combustions in Scramjet Combustor**  
Rouzbar R., EYİ S.  
51st AIAA/SAE/ASEE Joint Propulsion Conference, Orlando, FL, 27 July 2015 - 29 July 2015, vol.2015, (Full Text)
- XXXIV. **Convergence Acceleration Using Convergence Error Estimation**  
EYİ S.  
22nd AIAA Computational Fluid Dynamics Conference, Dallas, TX, 22 - 26 June 2015, vol.2015
- XXXV. **Three Dimensional Flow Analysis of a Cavity-Based Scramjet Combustor**  
Rouzbar R., EYİ S.  
22nd AIAA Computational Fluid Dynamics Conference, Dallas, TX, 22 June 2015 - 26 June 2015, vol.2015, (Full Text)
- XXXVI. **Performances of Newton and Preconditioned Newton-GMRES Methods in Hypersonic Flow Solutions**  
Muslubas E., EYİ S.  
22nd AIAA Computational Fluid Dynamics Conference, Dallas, TX, 22 - 26 June 2015, vol.2015, (Full Text)
- XXXVII. **Analysis of Hypersonic Nozzles with Newton and Preconditioned Newton-GMRES Methods**  
Muslubas E., EYİ S.  
51st AIAA/SAE/ASEE Joint Propulsion Conference, Orlando, FL, 22 June 2015 - 26 May 2016, vol.2015
- XXXVIII. **Three Dimensional Analysis of Hypersonic Flow Around Re-entry Vehicles Using Navier-Stokes Equations**  
Özgün M., EYİ S.  
7th International Conference on Recent Advances in Space Technologies, RAST 2015, 16 - 19 June 2015
- XXXIX. **The Effects of Static Aeroelasticity on the Performance of Supersonic/Hypersonic Nozzles**  
Duzel U., EYİ S.  
44th AIAA Fluid Dynamics Conference, AIAA AVIATION Forum, Atlanta, Georgia, United States Of America, 16 - 20 June 2014, vol.2014
- XL. **Analysis of hypersonic flow using three dimensional Navier-Stokes equations**  
Özgün M., EYİ S.  
50th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and exhibit 2014, Ohio, United States Of America, 28 - 30 July 2014
- XLI. **Analysis and design optimization of blunt bodies in hypersonic flow**  
Piskin T., EYİ S., Yumusak M.  
32nd AIAA Applied Aerodynamics Conference 2014, Atlanta, GA, United States Of America, 16 - 20 June 2014
- XLII. **Comparison of newton and newton-GMRES methods for three dimensional supersonic nozzle design**

- Yildizlar B., EYİ S.  
32nd AIAA Applied Aerodynamics Conference 2014, Atlanta, GA, United States Of America, 16 - 20 June 2014
- XLIII. **Static aeroelastic analysis of supersonic nozzles and performance response**  
Duzel U., EYİ S.  
50th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and exhibit 2014, Ohio, United States Of America, 28 - 30 July 2014
- XLIV. **Analysis and adjoint design optimization of hypersonic blunt bodies**  
Piskin T., EYİ S.  
50th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and exhibit 2014, Ohio, United States Of America, 28 - 30 July 2014, (Full Text)
- XLV. **Analysis and design optimization of three dimensional nozzles**  
Yildizlar B., EYİ S.  
50th AIAA/ASME/SAE/ASEE Joint Propulsion Conference and exhibit 2014, Ohio, United States Of America, 28 - 30 July 2014
- XLVI. **Aerothermodynamic design optimization in hypersonic flows**  
EYİ S.  
49th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, San Jose, CA, United States Of America, 14 - 17 July 2013, (Full Text)
- XLVII. **Three dimensional rocket nozzle design using adjoint method**  
EYİ S., Yumusak M.  
49th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, San Jose, CA, United States Of America, 14 - 17 July 2013
- XLVIII. **Aerodynamic design optimization of three dimensional rocket nozzles using adjoint method**  
EYİ S., Yumusak M.  
21st AIAA Computational Fluid Dynamics Conference, San Diego, CA, United States Of America, 24 - 27 June 2013
- XLIX. **Aerothermodynamic Shape Optimization of Hypersonic Blunt Bodies**  
Yumusak M., EYİ S.  
21st AIAA Computational Fluid Dynamics Conference, 24 - 27 June 2013, vol.2013
- L. **Convergence acceleration based on convergence error estimation**  
EYİ S., Yumusak M.  
21st AIAA Computational Fluid Dynamics Conference, San Diego, CA, United States Of America, 24 - 27 June 2013
- LI. **Three dimensional rocket nozzle design using adjoint method**  
EYİ S., Yumusak M.  
49th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, JPC 2013, California, United States Of America, 14 - 17 July 2013
- LII. **Aerothermodynamic design optimization in hypersonic flows**  
EYİ S.  
49th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, JPC 2013, California, United States Of America, 14 - 17 July 2013
- LIII. **Design optimization in hypersonic flows**  
EYİ S., Yumuşak M.  
18th AIAA/3AF International Space Planes and Hypersonic Systems and Technologies Conference 2012, Tours, France, 24 - 28 September 2012, (Full Text)
- LIV. **Convergence Error Estimation and Convergence Acceleration in Iteratively Solved Problems**  
EYİ S.  
7th International Conference on CFD (ICCFD7), Big Island, Hawaii, United States Of America, 9 - 13 July 2012, vol.7
- LV. **Three dimensional design optimization using analytical and numerical jacobians**  
EYİ S., Ezertas A., Degirmenci M., Yumusak M.  
20th AIAA Computational Fluid Dynamics Conference 2011, Honolulu, HI, United States Of America, 27 - 30 June 2011
- LVI. **Design optimization in chemically reacting flows**  
Yumuşak M., EYİ S.

20th AIAA Computational Fluid Dynamics Conference 2011, Honolulu, HI, United States Of America, 27 - 30 June 2011

- LVII. Finite-Difference Sensitivity Calculation in Iteratively Solved Problems**  
EYİ S.  
20th AIAA Computational Fluid Dynamics Conference 2011, Honolulu, HI, United States Of America, 27 - 30 June 2011, (Full Text)
- LVIII. Design Optimization in Non-equilibrium Reacting Flows**  
EYİ S., Ezertas A., Yumusak M.  
6th International Conference on Computational Fluid Dynamics (ICCFD), St Petersburg, Russia, 12 - 16 July 2010, pp.247-248
- LIX. Performance Evaluation of the Numerical Flux Jacobians in Flow Solution and Aerodynamic Design Optimization**  
Ezertas A., EYİ S.  
6th International Conference on Computational Fluid Dynamics (ICCFD), St Petersburg, Russia, 12 - 16 July 2010, pp.241-246
- LX. Performances of Numerical and Analytical Jacobians in Flow and Sensitivity Analysis**  
Ezertaş A. A., EYİ S.  
19th AIAA Computational Fluid Dynamics, San-Antonio, Northern Mariana Islands, 22 - 25 June 2009, vol.2009, (Full Text)
- LXI. Effects of the Jacobian evaluation on Newton's solution of the Euler equations**  
Onur O., EYİ S.  
17th AIAA Computational Fluid Dynamics Conference, Toronto, Canada, 6 - 09 June 2005
- LXII. Inverse design of compressor cascades on parallel computers**  
Özhamam M., EYİ S.  
40th AIAA Aerospace Sciences Meeting and Exhibit 2002, Reno, NV, United States Of America, 14 - 17 January 2002
- LXIII. Inverse design of compressor cascades**  
Kaplan B., EYİ S.  
39th Aerospace Sciences Meeting and Exhibit 2001, Reno, NV, United States Of America, 8 - 11 January 2001
- LXIV. Effects of sensitivity analysis on turbomachinery blade design**  
Kocabağ E., EYİ S.  
35th Intersociety Energy Conversion Engineering Conference and Exhibit 2000, Las Vegas, NV, United States Of America, 24 - 28 July 2000, (Full Text)
- LXV. Aerodynamic sensitivity analysis in inverse design**  
Kocabağ E., EYİ S.  
8th Symposium on Multidisciplinary Analysis and Optimization 2000, Long Beach, CA, United States Of America, 6 - 08 September 2000
- LXVI. Turbomachinery blade design via optimization**  
EYİ S., Lee K.  
38th Aerospace Sciences Meeting and Exhibit 2000, Reno, NV, United States Of America, 10 - 13 January 2000
- LXVII. Effects of sensitivity analysis on airfoil design**  
EYİ S., Lee K.  
36th AIAA Aerospace Sciences Meeting and Exhibit, 1998, Nevada, United States Of America, 12 - 15 January 1998
- LXVIII. Transonic turbomachinery blade design using optimization**  
EYİ S., Lee K.  
35th Aerospace Sciences Meeting and Exhibit, 1997, Nevada, United States Of America, 6 - 09 January 1997
- LXIX. Multi-element high-lift design using the Navier-Stokes equations**  
Eyi S., Chand K., Lee K., Rogers S., Kwak D.  
Fluid Dynamics Conference, 1996, Louisiana, United States Of America, 17 - 20 June 1996, pp.1-11
- LXX. Efficiency improvement in sensitivity evaluation in aerodynamic shape optimization**  
Eyi S., Lee K.  
14th Applied Aerodynamics Conference, 1996, Louisiana, United States Of America, 17 - 20 June 1996, pp.1022-



1031, (Full Text)

- LXXI. **Effects of sensitivity analysis on aerodynamic design optimization**  
Eyi S., Lee K.  
Proceedings of the 1995 ASME International Mechanical Congress and Exposition, San-Francisco, Costa Rica, 12 - 17 November 1995, vol.232, pp.1-8, (Full Text)
- LXXII. **High-lift design optimization using the Navier-Stokes equations**  
EYİ S., Lee K. D., Rogers S. E.  
33rd Aerospace Sciences Meeting and Exhibit, Reno,NV,U.S.A., 9 - 12 January 1995, vol.1995
- LXXIII. **Design efficiency evaluation for transonic airfoil optimization: A case for Navier-Stokes design**  
Hager J., Eyi S., Lee K.  
AIAA 23rd Fluid Dynamics, Plasmadynamics, and Lasers Conference, 1993, Florida, United States Of America, 6 - 09 July 1993
- LXXIV. **Inverse airfoil design using the Navier-stokes equations**  
Eyi S., Lee K.  
AIAA/AHS/ASEE Aerospace Design Conference, 1993, California, United States Of America, 16 - 19 February 1993
- LXXV. **A multi-point optimization for transonic airfoil design**  
Hager J., Eyi S., Lee K.  
4th Symposium on Multidisciplinary Analysis and Optimization, 1992, Ohio, United States Of America, 21 - 23 September 1992, pp.13-20
- LXXVI. **Transonic airfoil design by constrained optimization**  
Lee K., Eyi S.  
9th Applied Aerodynamics Conference, 1991, Maryland, United States Of America, 23 - 25 September 1991

## Funded Projects

EYİ S., Project Supported by Higher Education Institutions, Kimysal Reaksiyonlu Aero-Termodinamik Akışlarda Jacobian-Free Newton-Krylov (JFNK) ve Adjoint Yöntemleri ile Tasarım Optimizasyon Yazılımı Geliştirilmesi, 2015 - Continues  
EYİ S., TUBITAK Project, Hipersonik Akışlarda Çok Disiplinli Analiz ve Tasarım Optimizasyonu, 2012 - 2016  
EYİ S., Project Supported by Higher Education Institutions, Çok Bloklu (multi-Block) Yapısal (structured) Ağ (grid) Sisteminde Adjoint Yöntemini Kullanarak Tasarım Optimizasyonu., 2011 - 2011

## Mobility Activity

Research Scholarship Program, Post Doc, University of Michigan, United States Of America, 2017 - 2018  
Research Scholarship Program, Post Doc, University of Michigan, United States Of America, 2017 - 2018

## Metrics

Publication: 93  
Citation (WoS): 133  
Citation (Scopus): 225  
H-Index (WoS): 7  
H-Index (Scopus): 9

## Scholarships

Doktora sonrası araştırma, TUBITAK, 2018 - 2018  
Fulbright Program, 2017 - 2018

## **Non Academic Experience**

METU, Associate Professor (Promotion)

Department of Aerospace Engineering, University of Michigan, Ann Arbor, Michigan, Visiting Prpfessor

METU, Associate Professor (Title)

METU, Assistant Professor

University of Illinois at Urbana , Post-Doctoral Research Associate

University of Illinois at Urbana, Assistant