

Son güncelleme: 29 Ocak, 2024

Dr. Süleyman Cengizci

Bilgisayar Programcılığı (MYO)

Dr. Öğr. Üyesi

&

İşletme Bölümü (İİSBF)

Antalya Bilim Üniversitesi,
Üniversite Cad., Döşemealti, 07190 Antalya

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Akademik Deneyim

- 09.2023 – ...
- ◇ **Dr. Öğretim Üyesi**, Bilgisayar Programcılığı, Bilgisayar Teknolojileri Bölümü, Antalya Bilim Üniversitesi, 07190 Antalya.
 - ◇ **Dr. Dr. Öğretim Üyesi (görevlendirme)**, İİSBF, Antalya Bilim Üniversitesi, 07190 Antalya.
- 03.2022 – 09.2023
- ◇ **Dr. Öğretim Görevlisi**, Bilgisayar Programcılığı, Bilgisayar Teknolojileri Bölümü, Antalya Bilim Üniversitesi, 07190 Antalya.
 - ◇ **Dr. Öğretim Görevlisi (görevlendirme)**, İİSBF, Antalya Bilim Üniversitesi, 07190 Antalya.
- 12.2017 – 03.2022
- ◇ **Öğretim Görevlisi**, Bilgisayar Programcılığı, Bilgisayar Teknolojileri Bölümü, Antalya Bilim Üniversitesi, 07190 Antalya.
 - ◇ **Öğretim Görevlisi (görevlendirme)**, İİSBF, Antalya Bilim Üniversitesi, 07190 Antalya.
- 09.2014 – 12.2017
- ◇ **Araştırma Görevlisi**, Ekonomi Bölümü, İİSBF, Antalya Bilim Üniversitesi, 07190 Antalya.

İdari Görev

- 12.2023 – ...
- ◇ **Bölüm Başkanı**, Bilgisayar Programcılığı, Bilgisayar Teknolojileri Bölümü, Meslek Yüksekokulu, Antalya Bilim Üniversitesi. [web-sayfası](#)

Eğitim

- 2014 – 2022
- ◇ **Doktora – Bilimsel Hesaplama**, Uygulamalı Matematik Enstitüsü, Orta Doğu Teknik Üniversitesi (ODTÜ), 06800 Ankara.
Tez: *Stabilized Finite Element Simulations of Multispecies Inviscid Hypersonic Flows in Thermochemical Nonequilibrium* [tez-link](#)
Danışmanlar: Prof. Ömür Uğur & Prof. Tayfun E. Tezduyar
- 2012 – 2014
- ◇ **Yüksek lisans – Matematik**, Fen Bilimleri Enstitüsü, Nevşehir Hacı Bektaş Veli Üniversitesi, 50300 Nevşehir.
Özel öğrenci: ODTÜ Mühendislik Bilimleri Bölümü
Tez: *Singüler Pertürbasyon Problemlerinin Asimptotik Analizi*
Danışmanlar: Dr. Aytekin Eryılmaz & Dr. M. Tarık Atay

Eğitim (continued)

2008 – 2012 ♦ **Lisans – Matematik**, Matematik Bölümü, Niğde Ömer Halisdemir Üniversitesi, 51240 Niğde.
Bitirme projesi: *Dual Uzaylar*.

Akademik Ziyaret


9.2024 – 9.2025 ♦ **Doktora sonrası araştırmacı**, Mathematical Institute, University of Oxford, Oxford OX2 6GG, UK.

Danışman: Prof. Patrick E. Farrell  [web-page](#)

3.2022 – 9.2022 ♦ **Doktora sonrası araştırmacı**, Mechanical Engineering, Rice University, Houston, TX 77005, US.

Danışman: Prof. Tayfun E. Tezduyar  [web-page](#)

May 2017 ♦ **Erasmus+ visiting staff**, The Interdisciplinary Center for Scientific Computing (IWR), Ruprecht-Karls University of Heidelberg, 69120 Heidelberg, Germany.

Danışman: Prof. Anna Marciniak-Czochra  [web-page](#)

Araştırma

İlgi Alanları

- ♦ Araştırma ilgi alanlarım mühendislik bilimleri ve matematikle ilişkili birçok hesaplama alanını kapsamaktadır:
 - (Stabilize) Sonlu Eleman Metotları
 - Asimptotik Yaklaşımlar
 - Sayısal Analiz
 - Yüksek-hız Akışlar
 - Bilimsel Hesaplama & Programlama
 - Hesaplamalı Isı ve Kütle Akışı
 - Diferansiyel Denklemler
 - Hesaplamalı Akışkanlar Dinamiği
 - Aerodinamik
 - Hesaplamalı Fizik & Biyoloji
 - Mühendislik Simülasyonları
 - Hesaplamalı Finans

Makaleler

- ♦ **Cengizci S.**, Uğur Ö., Natesan S. Stabilized finite element method for convection-dominated problems with time-fractional derivatives. *Journal of Computational Science*, **2024**. doi: <https://doi.org/10.1016/j.jocs.2024.102214>.
- ♦ **Cengizci S.**, Uğur Ö. A comparative and illustrative study for solving singularly perturbed ODEs with two parameters. *TWMS Journal of Applied and Engineering Mathematics*, **2024** (accepted for publication).
- ♦ **Cengizci S.** An enhanced SUPG-stabilized finite element formulation for simulating natural phenomena governed by coupled system of reaction-convection-diffusion equations. *Mathematical Modelling and Numerical Simulation with Applications*, 3(4):297–317, **2023**. doi: <http://dx.doi.org/10.53391/mmnsa.1387125>
- ♦ **Cengizci S.**, Natesan S. Hybridized successive complementary expansions for solving convection-dominated 2D elliptic PDEs with boundary layers. *Computational and Applied Mathematics*, 42(6):273, **2023**. doi: <https://doi.org/10.1007/s40314-023-02411-w>.
- ♦ **Cengizci S.**, Uğur Ö., Natesan S. A SUPG formulation augmented with shock-capturing for solving convection-dominated reaction-convection-diffusion equations. *Computational and Applied Mathematics*, 42(5):235, **2023**. doi: <https://doi.org/10.1007/s40314-023-02370-2>.

Araştırma (continued)

- ◇ **Cengizci S.**, Uğur, Ö. SUPG formulation augmented with $YZ\beta$ shock-capturing for computing shallow-water equations. *ZAMM–Zeitschrift für Angewandte Mathematik und Mechanik*, **2023**. doi: <https://doi.org/10.1002/zamm.202200232>.
- ◇ **Cengizci S.**, Uğur, Ö. A stabilized FEM formulation with discontinuity-capturing for solving Burgers'-type equations at high Reynolds numbers. *Applied Mathematics and Computation*, **442**, 127705, **2023**. doi: <https://doi.org/10.1016/j.amc.2022.127705>.
- ◇ **Cengizci S.**, Kumar D., Atay M.T. A semi-analytic method for solving singularly perturbed twin-layer problems with a turning point, *Mathematical Modelling and Analysis*, **28**(1):102–117, **2023**. doi: <https://doi.org/10.3846/mma.2023.14953>.
- ◇ **Cengizci S.**, Uğur Ö., Natesan S. SUPG- $YZ\beta$ computation of chemically reactive convection-dominated nonlinear models. *International Journal of Computer Mathematics*, **100**(2):283–303, **2023**. doi: <https://doi.org/10.1080/00207160.2022.2114794>.
- ◇ **Cengizci S.**, Dursun Cengizci A., Uğur Ö. A mathematical model for human-to-human transmission of COVID-19: a case study for Turkey's data, *Mathematical Biosciences and Engineering*, **18**(6), 9787–9805, **2021**. doi: <https://doi.org/10.3934/mbe.2021480>.
- ◇ **Cengizci S.** A comparison between MMAE and SCEM for solving singularly perturbed linear boundary layer problems, *Filomat*, **33**(7), 2135–2148, **2019**. doi: <https://doi.org/10.2298/FIL1907135C>.
- ◇ **Cengizci S.**, Natesan S., Atay M.T. An asymptotic-numerical hybrid method for singularly perturbed system of two-point reaction-diffusion boundary-value problems. *Turkish Journal of Mathematics*, **43**(1), 460–472, **2019**. doi: <https://doi.org/10.3906/mat-1807-195>.
- ◇ **Cengizci S.** An asymptotic-numerical hybrid method for solving singularly perturbed linear delay differential equations. *International Journal of Differential Equations*, **2017**, Article ID 7269450, 2017. doi: <https://doi.org/10.1155/2017/7269450>.
- ◇ Atay M.T., **Cengizci S.**, Eryılmaz, A. SCEM approach for singularly perturbed linear turning mid-point problems with an interior layer. *New Trends in Mathematical Sciences*, **4**(1), 115–124, **2016**. doi: <https://doi.org/10.20852/ntmsci.2016115661>.
- ◇ **Cengizci S.**, Atay M.T., Eryılmaz A. A uniformly valid approximation algorithm for nonlinear ordinary singular perturbation problems with boundary layer solutions. *SpringerPlus*, **5**(280), **2016**. doi: <https://doi.org/10.1186/s40064-016-1865-6>.
- ◇ **Cengizci S.**, Eryılmaz A. Successive complementary expansion method for solving Troesch's problem as a singular perturbation problem, *International Journal of Engineering Mathematics*, Article ID 949463, **2015**. doi: <https://doi.org/10.1155/2015/949463>.

İnceleme/devam etmekte olan makaleler

- ◇ **Cengizci S.**, Öztop H. F., Mülayim G. Stabilized finite element simulation of natural convection in square cavities filled with nanofluids under different temperature boundary conditions, **2024** (submitted).
- ◇ **Cengizci S.**, A SUPS formulation for simulating natural/mixed heat convection in square cavities under intense magnetic effects, **2024** (submitted).
- ◇ **Cengizci S.**, Uğur Ö. Stabilized finite element computation of non-reacting inviscid high-speed flows around a cylinder using $YZ\beta$ shock-capturing, **2024** (submitted).
- ◇ **Cengizci S.**, Uğur Ö., Natesan S. SUPG-based stabilized finite element computations of convection-dominated 3D elliptic PDEs using shock-capturing. *Journal of Computational and Applied Mathematics*, **2023** (submitted).
- ◇ **Cengizci S.**, Uğur Ö. SUPG finite element computation of high-speed inviscid flows around a cylinder using $YZ\beta$ shock-capturing: II. Thermochemical nonequilibrium flows, **2023** (submitted).

Araştırma (continued)

- ◇ **Cengizci S.**, Uğur Ö. Magnetohydrodynamic duct flow simulations for high Hartmann numbers with a stabilized finite element formulation using shock-capturing, *Computers and Mathematics with Applications*, **2023** (submitted).
- ◇ **Cengizci S.**, Uğur Ö. Stabilized finite element simulations for pricing European- and American-style options under Heston's stochastic volatility model, **2024** (submitted).
- ◇ **Cengizci S.**, Öztop H. F., Mülayim G. A computational study on MHD natural convection heat transfer with Al_2O_3 -water nanofluid at high Hartmann numbers, **2024** (in progress).

Planlanmış araştırma

- ◇ Stabilized finite element computation of Onsager–Stefan–Maxwell equations
- ◇ Numerical solution of various tumor invasion models under convection dominance
- ◇ Numerical solution of partial integro-differential equations with convective terms
- ◇ Reservoir modeling within porous media
- ◇ Computational fluid dynamics simulations for urban planning
- ◇ Numerical solution of drift-diffusion equations arising in semiconductor theory
- ◇ Asymptotic and numerical methods for computational optics/photonics
- ◇ Computational Peridynamics
- ◇ Machine learning (ML) methods for computational science
- ◇ Artificial intelligence (AI) for science

Konferans sunumları

- ◇ **Cengizci S.** A computational study on natural convection phenomena. International Conference of Young Mathematicians, June 1–3, **2023**, Institute of Mathematics of NAS of Ukraine (online), Kyiv, Ukraine. <https://www.imath.kiev.ua/~young/youngconf2023/index.php?module=1&lang=en>.
- ◇ **Cengizci S.**, Uğur Ö. Pricing European- and American-type options under stochastic volatility: a computational study. Fifth Romanian Itinerant Seminar on Mathematical Analysis and its Applications, May 26–28, **2023**, Craiova, Romania. <http://rismaa.ucv.ro/>.
- ◇ **Cengizci S.** Stabilized finite element simulations of dam-break problems. International E-Conference on Mathematical and Statistical Sciences: A Selçuk Meeting, October 20–22, **2023**, Selçuk University, Konya, Turkey. <https://icomss22.selcuk.edu.tr/>.
- ◇ **Cengizci S.** Stabilized finite element computations augmented with shock-capturing: 3D convection-diffusion equations. International Conference on Analysis and Applied Mathematics (ICAAM), October 31–November 6, **2022**, Antalya, Turkey. <http://icaam-online.org/>.
- ◇ **Cengizci S.**, Uğur Ö., Natesan S. Stabilized finite element simulations for Burgers'-type equations, International Conference on Analysis and Its Applications (ICAA NEPAL 2021), April 9–11, **2021**, Kathmandu University, Dhulikhel, Nepal. <http://icaa2021.ku.edu.np/>.
- ◇ **Cengizci S.**, Uğur Ö., Tezduyar T.E. Stabilized numerical simulations of hypersonic flows in thermochemical nonequilibrium with FEniCS, FEniCS2021, 22–26 March **2021**, University of Cambridge, Virtual Conference. <https://fenics2021.com/talks/cengizci.html>.
- ◇ **Cengizci S.**, Uğur Ö. SUPG-stabilized finite element formulation of shallow-water equations. International Conference of Young Mathematicians, June 3–5, **2021**, Institute of Mathematics of NAS of Ukraine, Kyiv, Ukraine. <https://www.imath.kiev.ua/~young/youngconf2021/index.php?lang=en>.

Araştırma (continued)

- ◇ **Cengizci S.**, Uğur Ö., Takizawa K., Tezduyar T.E. A streamline-upwind/Petrov–Galerkin formulation for supersonic and hypersonic flow simulations, The 20th Biennial Computational Techniques and Applications Conference (CTAC2020), 30th Aug–2nd Sep **2020**, Sydney, NSW, Australia. <https://www.ctac2020.unsw.edu.au/>.
- ◇ **Cengizci S.**, Uğur Ö., Natesan S. A SUPG formulation for solving a class of singularly perturbed steady problems in 2D, The 20th Biennial Computational Techniques and Applications Conference (CTAC2020), 30th Aug–2nd Sep **2020**, Sydney, NSW, Australia. <https://www.ctac2020.unsw.edu.au/>.
- ◇ **Cengizci S.**, Uğur Ö., Natesan S. A stabilized finite element formulation for numerical simulation of convection-dominated reactive models, Advances in Differential Equations and Numerical Analysis (ADENA), October 12–14, **2020**, Indian Institute of Technology Guwahati, India. <https://www.iitg.ac.in/maths/ext/adena2020/>.
- ◇ **Cengizci S.** Some numerical experiments on singularly perturbed problems with multi-parameters, 8th International Eurasian Conference on Mathematical Sciences and Applications (IECMSA-2019), August 27–30, **2019**, Baku, Azerbaijan. <http://www.iecmsa.org/2019/>.
- ◇ **Cengizci S.** Some comparisons between MMAE and SCEM for solving singularly perturbed linear problems, The Third International Conference on Computational Mathematics and Engineering Sciences (CMES2018), May 4–6, **2018**, Girne, Cyprus.
- ◇ **Cengizci S.**, Eryilmaz A., “A hybrid approach for solving singularly perturbed turning point problems exhibiting dual layers”, International Conference on Mathematics and Mathematics Education (ICMME-2016), May 12–14, **2016**, Fırat University, Elazığ, Turkey. <http://theicmme.org/2016/Default.aspx>.
- ◇ **Cengizci S.**, Atay M.T., Eryilmaz A. A uniformly valid approximation algorithm for singularly perturbed two-point boundary value problems in nonlinear ordinary differential equations, International Conference on Advancements in Mathematical Sciences, November 5–7, **2015**, Antalya, Turkey.

Araştırma Projeleri

- ◇ **TÜBİTAK–2219**: Çok-bileşenli konveksiyon-baskın taşıma fenomenlerinin sayısal benzetimleri için stabilize edilmiş sonlu eleman yöntemleri. 2219-Yurt Dışı Doktora Sonrası Araştırma Burs Programı. Bütçe: €28,200.

Dersler

- ◇ **Öğretim Görevlisi/Üyesi olarak (2017–...)**:
 - Calculus for Social Sciences I–II (Dept. of Business Adm.) ×6
 - Mathematics I–II (Dept. of Economics) ×3
 - Introduction to Linear Algebra (Dept. of Business Adm.) ×6
 - Professional English (Computer Prog.) ×1
 - Computer Hardware (Computer Prog.) ×2
 - Information Technologies (multi-dept.) ×2
 - Business Analytics (Dept. of Business Adm.) ×1
 - Statistics for Social Sciences (Dept. of Political Sciences) ×5
 - Decision Analysis Techniques (multi-dept.) ×1
 - Computer Security (Computer Prog.) ×1
 - Technical Mathematics (Dept. of Architecture) ×2
 - Introduction to Programming II (Python Programming for Computer Prog.) ×2
 - Fluid Mechanics (Dept. of Mechanical Eng.) ×1

Dersler (continued)

◇ Ders asistanı olarak (2014–2017):

- Calculus for Social Sciences I–II (Dept. of Economics) ×2
- Introduction to Linear Algebra (Dept. of Business Adm.) ×2
- Mathematical Economics (Dept. of Economics) ×1
- Microeconomics (Dept. of Economics) ×1

Dil-kodlama-program

Diller ◇ Türkçe, İngilizce, Almanca (başlangıç)

Kodlama & Yazılım ◇ Python, C++, Matlab, L^AT_EX, FEniCS, Linux, Firedrake (başlangıç), SU2 (başlangıç)

Diğer

Akademik dergilerde hakemlik

◇ Hakemlik yaptığım WoS indeksli dergiler:

- Numerical Algorithms
- Computational and Applied Mathematics
- Mathematical Sciences
- Heliyon
- Mathematical Methods in the Applied Sciences
- Gazi University Journal of Science
- Physics of Fluids
- Neural Processing Letters
- Mathematical Modelling and Analysis
- Differential Equations and Dynamical Systems
- Journal of Applied Mathematics
- Hacettepe Journal of Mathematics and Statistics

Üniversite dışı ders verme

2019–2021 ◇ **International Baccalaureate (IB) Matematik Öğretmeni**, Antalya Yusuf Ziya Öner Fen Lisesi, 07192 Antalya.

Sertifika

- 2019 ◇ **Öğretmenlik** – Mathematics for the International Baccalaureate (IB) Diploma: Higher Level.
- 2014 ◇ **Pedagojik formasyon** – Lise matematik öğretmenliği. Eğitim Fakültesi, Akdeniz Üniversitesi, 07058 Antalya.

Panel

- 2019 ◇ **Gözlemci Panelist**, Matematik–Fizik Araştırma Grubu, TÜBİTAK, 18.09.2020.

Akademik ödül

- ◇ **Doktora tez ödülü**, Orta Doğu Teknik Üniversitesi, 2023. [Link](#)
- ◇ **Akademik yayın teşvik ödülü**, Antalya Bilim Üniversitesi (×3)
- ◇ **Yayın teşvik ödülü**, TÜBİTAK, UBYT (×2)

Referanslar

Prof. Ömür UĞUR

Bilimsel Hesaplama, Uygulamalı Mat. Enst.

Orta Doğu Teknik Üniversitesi

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Prof. Srinivasan NATESAN

Matematik Bölümü

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Assoc. Prof. Bilen Emek ABALI

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Assoc. Prof. Mehmet Tarık ATAY

Mühendislik Bilimleri Bölümü

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