



# AYTEKİN BAYRAM ÇIBİK

## PROF.

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### International Researcher IDs

ScholarID: GvxGqocAAAAJ

ORCID: 0000-0003-3571-4137

Publons / Web Of Science ResearcherID: AAB-3737-2020

ScopusID: 55371787500

Yoksis Researcher ID: 60041



## Education

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| Doctorate<br>2004 - 2011 | Middle East Technical University, Graduate School Of Natural And Applied Sciences, Matematik (Dr), Turkey |
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| Undergraduate<br>2000 - 2004 | Cukurova University, Fen-Edebiyat Fakültesi, Matematik Bölümü, Turkey |
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## Foreign Languages

English, C1 Advanced

## Academic Titles / Tasks

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| Professor<br>2023 - Continues | Gazi University, Fen Fakültesi, Matematik |
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| Associate Professor<br>2017 - 2023 | Gazi University, Fen Fakültesi, Matematik |
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| Assistant Professor<br>2012 - 2017 | Gazi University, Fen Fakültesi, Matematik |
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| Research Assistant<br>2005 - 2012 | Gazi University, Fen Fakültesi, Matematik |
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## Supported Projects

1. Kaya Merdan S., Yılmaz F. N., Çıbık A. B., TUBITAK Project, Investigation of Mathematical and Physical Analysis and Effective Computational Methods of Efficient Algorithms Based on Time Filtering for Optimal Control of Turbulent Flows, 2020 - 2023
2. Yavuzcan H. G., Kutbay N. H., Şık A., Çıbık A. B., İçöz G., Erasmus Project, "Digital Media for VET in SMEs: Online learning of digital media competences for SMEs to empower workplace learning (DigiVET), 2019 - 2022
3. Yavuzcan H. G., Çıbık A. B., Kutbay N. H., Akdaş D., İçöz G., Erasmus Project, "Data Skills for International Development Careers (DataSkills), 2019 - 2022
4. Çıbık A. B., Kaya Merdan S., TUBITAK Project, Manyetik Alan Etkisi Altındaki Çift Yayınimli Doğal Konveksiyon Problemi İçin İkinci Mertebe Zaman Adımlaması Yöntemleri Ailesi, 2019 - 2020
5. Çıbık A. B., EU Supported Other Project, Ankara daki Genç Sağlık Ara Elemanlarının İstihdamı, 2009 - 2009

## Published journal articles indexed by SCI, SSCI, and AHCI

1. **A Hybrid Regularization for the Navier–Stokes Equations**  
Çıbık A., Siddiqua F., Layton W.  
Numerical Methods for Partial Differential Equations, vol.41, no.2, 2025 (SCI-Expanded)
2. **Optimal Control problems of NS- $\alpha$  and NS- $\omega$  turbulence models: analysis and numerical tests**  
Haçat G., Çıbık A., YILMAZ F. N., KAYA MERDAN S.  
Numerical Algorithms, 2025 (SCI-Expanded)
3. **Adaptive parameter selection in nudging based data assimilation**  
Cibik A., Fang R., Layton W., Siddiqua F.  
COMPUTER METHODS IN APPLIED MECHANICS AND ENGINEERING, vol.433, 2025 (SCI-Expanded)
4. **Convergence of a Ramshaw-Mesina iteration**  
Çıbık A. B., Layton W.  
APPLIED MATHEMATICS LETTERS, vol.154, 2024 (SCI-Expanded)
5. **On an optimal control problem of the Leray- $\alpha$  model**  
Hacat G., ÇIBIK A. B., Yilmaz F. N., Kaya S.  
JOURNAL OF COMPUTATIONAL AND APPLIED MATHEMATICS, vol.436, 2024 (SCI-Expanded)
6. **Deferred correction method for the continuous data assimilation model**  
Ağgöl M., Çıbık A. B., Eroglu F. G., Kaya Merdan S.  
COMPUTER METHODS IN APPLIED MECHANICS AND ENGINEERING, vol.415, 2023 (SCI-Expanded)
7. **An Improved Arrow-Hurwicz Method for the Steady-State Navier-Stokes Equations**  
Takhirov A., Çıbık A. B., Eroglu F. G., Kaya Merdan S.  
JOURNAL OF SCIENTIFIC COMPUTING, vol.96, no.2, 2023 (SCI-Expanded)
8. **Analysis of continuous data assimilation scheme for the Navier-Stokes equations using variational multiscale method**  
Haçat G., Akbas M., Çıbık A. B.  
JOURNAL OF COMPUTATIONAL SCIENCE, vol.66, 2023 (SCI-Expanded)
9. **Time filtered second order backward Euler method for EMAC formulation of Navier-Stokes equations**  
Demir M., Çıbık A. B., KAYA MERDAN S.  
Journal of Mathematical Analysis and Applications, vol.516, no.2, 2022 (SCI-Expanded)
10. **Error estimates for the optimal control of Navier-Stokes equations using curvature based stabilization**  
Hacat G., Yilmaz F. N., Cibik A. B., Kaya S.  
APPLIED MATHEMATICS AND COMPUTATION, vol.430, 2022 (SCI-Expanded)
11. **Bringing about the data revolution in development: What data skills do aspiring development professionals need?**

Bennett R., Alberti G., Cibik A. B., Eremenko T., Formosa S., Formosa-Pace J., Jimenez-Buedo M., Lynch K., Salazar L., Ubeda P.

JOURNAL OF INTERNATIONAL DEVELOPMENT, vol.34, no.7, pp.1381-1397, 2022 (SSCI)

12. **On the performance of curvature stabilization time stepping methods for double-diffusive natural convection flows in the presence of magnetic field**  
Cibik A. B., EROĞLU F. G., Kaya S.  
NUMERICAL ALGORITHMS, vol.88, no.1, pp.475-498, 2021 (SCI-Expanded)
13. **A second order decoupled penalty projection method based on deferred correction for MHD in Elsasser variable**  
Erkmen D., Kaya S., Cibik A. B.  
JOURNAL OF COMPUTATIONAL AND APPLIED MATHEMATICS, vol.371, 2020 (SCI-Expanded)
14. **Analysis of Second Order Time Filtered Backward Euler Method for MHD Equations**  
Cibik A. B., Eroğlu F. G., Kaya S.  
JOURNAL OF SCIENTIFIC COMPUTING, vol.82, no.2, 2020 (SCI-Expanded)
15. **LONG TIME STABILITY OF A LINEARLY EXTRAPOLATED BLENDED BDF SCHEME FOR MULTIPHYSICS FLOWS**  
Cibik A. B., Eroğlu F. G., Kaya S.  
INTERNATIONAL JOURNAL OF NUMERICAL ANALYSIS AND MODELING, vol.17, pp.24-41, 2020 (SCI-Expanded)
16. **A family of second order time stepping methods for the Darcy-Brinkman equations**  
Cibik A. B., DEMİR M., Kaya S.  
JOURNAL OF MATHEMATICAL ANALYSIS AND APPLICATIONS, vol.472, no.1, pp.148-175, 2019 (SCI-Expanded)
17. **Variational multiscale method for the optimal control problems of convection-diffusion-reaction equations**  
ÇIBIK A. B., YILMAZ F. N.  
TURKISH JOURNAL OF MATHEMATICS, vol.42, no.1, pp.164-180, 2018 (SCI-Expanded)
18. **A projection-based variational multiscale method for the optimal control problems governed by the stationary Navier-Stokes equations**  
YILMAZ F. N., Cibik A. B.  
APPLIED NUMERICAL MATHEMATICS, vol.106, pp.116-128, 2016 (SCI-Expanded)
19. **The effect of a sparse grad-div stabilization on control of stationary Navier-Stokes equations**  
Cibik A. B.  
JOURNAL OF MATHEMATICAL ANALYSIS AND APPLICATIONS, vol.437, no.1, pp.613-628, 2016 (SCI-Expanded)
20. **Finite element analysis of a projection-based stabilization method for the Darcy-Brinkman equations in double-diffusive convection**  
Cibik A. B., Kaya S.  
APPLIED NUMERICAL MATHEMATICS, vol.64, pp.35-49, 2013 (SCI-Expanded)
21. **A projection-based stabilized finite element method for steady-state natural convection problem**  
Cibik A. B., Kaya S.  
JOURNAL OF MATHEMATICAL ANALYSIS AND APPLICATIONS, vol.381, no.2, pp.469-484, 2011 (SCI-Expanded)

## Articles Published in Other Journals

1. **Modeling Cardiovascular Flow with Artificial Viscosity: Analyzing Navier-Stokes Solutions and Simulating Cardiovascular Diseases**  
KARADAVUT H., HAÇAT G., ÇIBIK A.  
Gazi University Journal of Science Part A: Engineering and Innovation, vol.11, no.3, pp.463-480, 2024 (Peer-Reviewed Journal)
2. **Black Scholes Denkleminin Sonlu Elemanlar Yöntemi ile Çözümü**  
ASAR C., ÇIBIK A. B.  
Gazi Üniversitesi Fen Fakültesi Dergisi, vol.3, no.1, pp.58-69, 2022 (Peer-Reviewed Journal)

3. **Grad-Div Kararlılaştırılmış BDF-2 Zaman Adımlı Leray- $\alpha$  Modelinin Sayısal Analizi**  
DOĞRU P., ÇIBIK A. B.  
Gazi Üniversitesi Fen Fakültesi Dergisi, vol.2, no.2, pp.1-13, 2021 (Peer-Reviewed Journal)
4. **Brezzi Pitkaranta stabilization and a priori error analysis for the Stokes Control**  
ÇIBIK A. B., YILMAZ F. N.  
An international journal of optimization and control, vol.7, no.1, pp.75-82, 2017 (Peer-Reviewed Journal)

## Books

1. **Python Destekli Sayısal Analiz**  
AYAZ F., ÇIBIK A. B., Haçat G.  
seçkin yayıncılık, Ankara, 2024
2. **Mathematica ile Diferensiyel Denklemler**  
ÇIBIK A. B., Karadavut H.  
seçkin yayıncılık, Ankara, 2023
3. **Çözümlü Diferensiyel Denklemler Problemleri**  
ÇEKİM B., İÇÖZ G., ÇIBIK A. B.  
ders zamanı, Ankara, 2019

## Papers Published in Refereed Scientific Meetings

1. **OPTIMAL CONTROL'S IMPACT ON TURBULENCE MODELING**  
Haçat G., ÇIBIK A. B.  
11. INTERNATIONAL EUROPEAN CONGRESS ON ADVANCED STUDIES IN BASIC SCIENCES, roma, Italy, 11 - 13 November 2024
2. **İkinci Mertebe Zaman Adımlı Bir Leray-alfa Modeli İçin Sonlu Elemanlar Yöntemi**  
ÇIBIK A. B., Haçat G.  
5. Ulusal Başkent Disiplinlerarası Bilimsel Çalışmalar Kongresi, Ankara, Turkey, 21 June 2022
3. **Curvature Stabilization and Thermally Driven Flows**  
ÇIBIK A. B.  
8TH INTERNATIONAL EURASIAN CONFERENCE ON MATHEMATICAL SCIENCES AND APPLICATIONS, Baku, Azerbaijan, 27 - 30 August 2019
4. **A Numerical Study of Second Order Time Stepping Methods for the Boussinesq Equations**  
DEMİR M., ÇIBIK A. B., KAYA MERDAN S.  
BEYOND: Workshop on Computational Science and Engineering, Turkey, 20 - 21 October 2018
5. **Numerical analysis of a Family of Second Order Time Stepping Methods for Boussinesq Equations**  
ÇIBIK A. B., DEMİR M., KAYA MERDAN S.  
World Congress on Engineering 2018, 4 - 06 July 2018, vol.1, pp.56-59
6. **Doşal Konveksiyon Problemleri için İkinci Mertebeden Zaman Adımlı Yöntemleri Ailesinin Sayısal Analizi**  
DEMİR M., ÇIBIK A. B., KAYA MERDAN S.  
13. Ankara Matematik Günleri, Turkey, 27 - 28 May 2018
7. **Konveksiyon-difüzyon-reaksiyon denkleminin optimal kontrolü için izdüşüm esaslı varyasyonel çoklu ızgarayöntemi**  
ÇIBIK A. B.  
II. Uluslararası Multidisipliner Çalışmaları Kongresi, 4 - 05 May 2018
8. **Konveksiyon Difüzyon Reaksiyon Denklemleri için Sonlu Elemanlar Yöntemi**  
Yıldırım M., ÇIBIK A. B.  
11. Ankara matematik günleri, Ankara, Turkey, 26 - 27 May 2016

9. **The effect of a sparse grad div stabilization on control of stationary Navier Stokes equations**  
ÇIBIK A. B.  
International Conference on Scientific Computation and Differential Equations 2015, Potsdam, Germany, 14 - 18 September 2015
10. **Finite element analysis of IMEX methods for the incompressible non isothermal flows**  
ÇIBIK A. B.  
The 3rd international conference on complex dynamical systems, Ankara, Turkey, 24 - 26 November 2014
11. **A finite element error analysis for the natural convection equations with an infinite prandtl number**  
ÇIBIK A. B., KAYA MERDAN S.  
International Conference on Applied Analysis and Algebra 2011, İstanbul, Turkey, 29 June - 02 July 2011
12. **Doğal konveksiyon problemi için iki seviyeli metodun nümerik analizi**  
ÇIBIK A. B.  
5. Ankara Matematik Günleri, Ankara, Turkey, 3 - 04 June 2010

## Other Publications

1. **Data Skills project instructor handbook (Turkish Version)**  
Çibık A. B.  
Other, pp.1-30, 2022

## Academic and Administrative Experience

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|                  |                                  |  |
|------------------|----------------------------------|--|
|                  | <b>Erasmus Program</b>           |  |
| 2017 - Continues | <b>Institutional Coordinator</b> | Gazi University, Fen Fakültesi, Matematik Bölümü |

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## Courses

### Undergraduate

Differential Equations , Undergraduate, 2016 - 2017  
Mathematics I, Undergraduate, 2016 - 2017  
Diferensiyel Denklemler, Undergraduate, 2016 - 2017  
Araştırma Projesi, Undergraduate, 2016 - 2017

## Supervised Theses

ÇIBIK A. B., FINITE ELEMENT SOLUTIONS OF THE BLACK SCHOLES EQUATION, Postgraduate, C.ASAR(Student), 2019  
ÇIBIK A. B., The Finite Element Solution Of Convection-Diffusion-Reaction Type Equations, Postgraduate, M.YILDIRIM(Student), 2016  
ÇIBIK A. B., Solution Of Some Partial Differential Equations By Finite Difference Method., Postgraduate, T.FIRAT(Student), 2015

## Mobility Activity

Sabbatical Leave, Post Doc, The University of Pittsburgh, United States Of America, 2023 - 2024

## Metrics

Publication: 41

Citation (WoS): 115

Citation (Scopus): 101

H-Index (WoS): 5

H-Index (Scopus): 5

## Research Areas

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

## Non Academic Experience

Almanya-Berlin-WIAS Institute, Misafir Arařtırmacı