

## Assoc. Prof. FİKRIYE NURAY YILMAZ

### Personal Information

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### Education Information

Doctorate, Middle East Technical University, Fen-Edebiyat Fakültesi, Matematik Bölümü, Turkey 2004 - 2011

Under Graduate, Middle East Technical University, Fen-Edebiyat Fakültesi, Matematik Bölümü, Turkey 1999 - 2004

### Foreign Languages

English, C1 Advanced

### Research Areas

Differential Equations, Partial Differential Equations, Optimization, Numerical Analysis

### Academic Titles / Tasks

Associate Professor, Gazi University, Fen Fakültesi, Matematik, 2018 - Continues

Lecturer PhD, Gazi University, Fen Fakültesi, Matematik, 2014 - 2018

Research Assistant, Gazi University, Fen Fakültesi, Matematik Bölümü, 2005 - 2014

### Courses

Linear Algebra, Under Graduate, 2016 - 2017, 2017 - 2018

Mathematics II, Under Graduate, 2017 - 2018

Lineer Cebir, Under Graduate, 2016 - 2017, 2017 - 2018

Matematik I, Under Graduate, 2016 - 2017, 2017 - 2018

Differential Equations, Under Graduate, 2016 - 2017, 2017 - 2018

Diferensiyel Denklemler, Under Graduate, 2017 - 2018

Sayısal Çözümleme, Under Graduate, 2016 - 2017

Nümerik Analiz, Post Graduate, 2016 - 2017

Kısmi Türevli Denklemlerin Akışkanlar Mekaniğindeki Uygulamaları, Post Graduate, 2016 - 2017

Diferansiyel Denklemler, Under Graduate, 2016 - 2017

### Advising Theses

YILMAZ F. N. , Stokastik diferensiyel denklemlerin Runge-Kutta yöntemi ile çözümü, Post Graduate, Z.YETKİN(Student),

2019

YILMAZ F. N. , Stokastik kontrol problemlerin nümerik çözümleri ve finansal uygulamaları, Post Graduate, Y.SARGIN(Student), 2019

YILMAZ F. N. , Numerical Solutions Of Stochastic Differential Equations And Stability, Post Graduate, F.TÜRKKAN(Student), 2019

YILMAZ F. N. , Stochastic Heat Equation And Numerical Solution, Post Graduate, E.CENGİZHAN(Student), 2019

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

- I. **Strong-order conditions of Runge-Kutta method for stochastic optimal control problems**  
Yilmaz F. N. , Bakan H. O. , Weber G.  
APPLIED NUMERICAL MATHEMATICS, vol.157, pp.470-489, 2020 (Journal Indexed in SCI)
- II. **Minimal truncation error constants for Runge-Kutta method for stochastic optimal control problems**  
Bakan H. O. , YILMAZ F. N. , Weber G.  
JOURNAL OF COMPUTATIONAL AND APPLIED MATHEMATICS, vol.331, pp.196-207, 2018 (Journal Indexed in SCI)
- III. **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 (Journal Indexed in SCI)
- IV. **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 (Journal Indexed in SCI)
- V. **Semi-discrete a priori error analysis for the optimal control of the unsteady Navier-Stokes equations with variational multiscale stabilization**  
YILMAZ F. N.  
APPLIED MATHEMATICS AND COMPUTATION, vol.276, pp.127-142, 2016 (Journal Indexed in SCI)
- VI. **Optimal boundary control of the unsteady Burgers equation with simultaneous space-time discretization**  
KARASÖZEN B., YILMAZ F. N.  
OPTIMAL CONTROL APPLICATIONS & METHODS, vol.35, no.4, pp.423-434, 2014 (Journal Indexed in SCI)
- VII. **An all-at-once approach for the optimal control of the unsteady Burgers equation**  
YILMAZ F. N. , KARASÖZEN B.  
JOURNAL OF COMPUTATIONAL AND APPLIED MATHEMATICS, vol.259, pp.771-779, 2014 (Journal Indexed in SCI)
- VIII. **Solving optimal control problems for the unsteady Burgers equation in COMSOL multiphysics**  
Yilmaz F. N. , KARASÖZEN B.  
Journal of Computational and Applied Mathematics, vol.235, no.16, pp.4839-4850, 2011 (Journal Indexed in SCI Expanded)

## Articles Published in Other Journals

- I. **A discrete optimality system for an optimal harvesting problem**  
Bakan H. O. , YILMAZ F. N. , Weber G.  
COMPUTATIONAL MANAGEMENT SCIENCE, vol.14, no.4, pp.519-533, 2017 (Journal Indexed in ESCI)
- II. **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 (Refereed Journals of Other Institutions)
- III. **Simulation of stochastic optimal control problems with symplectic partitioned Runge Kutta scheme**

YILMAZ F. N. , ÖZ H., WEBER G. W.

Dynamics of Continuous, Discrete and Impulsive Systems: Series B: Applications & Algorithms, vol.22, pp.425-440, 2015 (Refereed Journals of Other Institutions)

## Books & Book Chapters

**I. Itô–Taylor Expansions for Systems of Stochastic Differential Equations with Applications to Stochastic Partial Differential Equations**

Yılmaz F. N. , Öz Bakan H., Weber G. W.

in: Modeling, Dynamics, Optimization and Bioeconomics II , Alberto A. PintoDavid Zilberman, Editor, Springer, London/Berlin , London, pp.513-532, 2017

**II. Change of Time Method and Stochastic Taylor Expansion with Computation of Expectation**

YILMAZ F. N. , ÖZ H., WEBER G. W.

in: Modeling Optimization Dynamics and Bioeconomy, , Editor, Springer, pp.739-753, 2014

## Refereed Congress / Symposium Publications in Proceedings

**I. Comparison of the stabilized finite element solutions of optimal control of convection diffusion equation**

YILMAZ F. N.

International Conference on Applied Mathematics in Engineering (ICAME18), 27 June 2018

**II. Numerical solutions of optimal control problemsfor microwave heating**

yılmaz a., Mahariq I., YILMAZ F. N.

ThiIER International Conference on Applied Physics and Mathematics, 30 May 2016

**III. Deriving the discrete optimal control problem of stochastic partial differential equations by Runge Kutta method with numerical applications**

YILMAZ F. N. , ÖZ H., WEBER G. W.

International conference on mathematics and mathematics education, 12 - 14 May 2016

**IV. Optimal Control of Stochastic Heat Equation with Symplectic Partitioned Runge Kutta Scheme**

YILMAZ F. N. , ÖZ H., WEBER G. W.

14th International Workshop on Dynamical Systems and Applications, Ankara, 29 June 2015

**V. Optimal control problems of stochastic flows with Runge Kutta schemes**

YILMAZ F. N.

International Conference on Mathematics and Mechanics,ICMM 2015 Paris, 27 - 28 April 2015

**VI. All at once approach with Preconditioning Optimal Boundary Control of Burgers Equation**

YILMAZ F. N. , KARASÖZEN B.

International Conference on Applied and Computational Mathematics, METU, Ankara, 03 October 2012

**VII. All at once method for Optimal Boundary Control of Burgers Equation**

YILMAZ F. N. , KARASÖZEN B.

International Conference on Applied Analysis and Algebra, İstanbul, 29 June 2011

## Supported Projects

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

## **Citations**

Total Citations (WOS):27

h-index (WOS):3

## **Scholarships**

TÜBİTAK 2214, TUBITAK, 2007 - 2008