

## **Prof. Fikret Çalışkan**

### **Personal Information**

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### **International Researcher IDs**

ORCID: 0000-0002-9108-6553

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Yoksis Researcher ID: 29809

### **Education Information**

Doctorate, University of London-Queen Mary and Westfield College, Mühendislik Fak., United Kingdom 1989 - 1993

Postgraduate, Istanbul Technical University, Elektrik-Elektronik Fakültesi, Kontrol Ve Bilgisayar Mühendisliği Bölümü, Turkey 1984 - 1987

Undergraduate, Istanbul Technical University, Elektrik-Elektronik Fakültesi, Elektronik Ve Haberleşme Mühendisliği Bölümü, Turkey 1980 - 1984

### **Foreign Languages**

English

### **Dissertations**

Doctorate, Self Repairing Flight Control Systems, University of London-Queen Mary and Westfield College, 1993

Postgraduate, Senkron jeneratörün adaptif Kontrolü, İstanbul Teknik Üniversitesi, Elektrik-Elektronik Fakültesi, Kontrol Ve Otomasyon Mühendisliği Bölümü, 1987

### **Research Areas**

Technical Sciences, Electrical and Electronics Engineering

### **Academic Titles / Tasks**

Professor, Istanbul Technical University, Elektrik-Elektronik, Kontrol Ve Otomasyon Mühendisliği, 1985 - Continues

### **Academic and Administrative Experience**

İstanbul Teknik Üniversitesi, Elektrik-Elektronik Fakültesi, 2013 - 2015

## Courses

Linear Algebra and its Applications, Undergraduate, 2020 - 2021

State Space Methods in Control Systems, Undergraduate, 2021 - 2022

Çok Değişkenli Kontrol Kuramı, Doctorate, 2016 - 2017

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

- I. **Sensor fault-tolerant control of a quadrotor unmanned aerial vehicle**  
Patan M. G., Çalışkan F.  
PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART G-JOURNAL OF AEROSPACE ENGINEERING, vol.236, no.2, pp.417-433, 2022 (SCI-Expanded)
- II. **Model Predictive Control and Controller Parameter Optimisation of Combustion Instabilities**  
Yazar I., Caliskan F., Vepa R.  
INTERNATIONAL JOURNAL OF TURBO & JET-ENGINES, vol.36, no.2, pp.185-194, 2019 (SCI-Expanded)
- III. **Influence of flame dynamics on the optimal control of combustion with uncertainties**  
Yazar I., Çalışkan F., Vepa R.  
COMBUSTION SCIENCE AND TECHNOLOGY, vol.190, no.6, pp.983-1006, 2018 (SCI-Expanded)
- IV. **Simulation-based dynamic model and speed controller design of a small-scale turbojet engine**  
Yazar I., Kiyak E., Çalışkan F., Karakoc T. H.  
AIRCRAFT ENGINEERING AND AEROSPACE TECHNOLOGY, vol.90, no.2, pp.351-358, 2018 (SCI-Expanded)
- V. **Fault tolerant heading control system design for Turac unmanned aerial vehicle**  
YUKSEK B., Üre N. K., Çalışkan F., İnalhan G.  
TRANSACTIONS OF THE INSTITUTE OF MEASUREMENT AND CONTROL, vol.39, no.3, pp.267-276, 2017 (SCI-Expanded)
- VI. **Multiple fault-based FDI and reconfiguration for aircraft engine sensors**  
YAZAR I., Çalışkan F., Kiyak E.  
AIRCRAFT ENGINEERING AND AEROSPACE TECHNOLOGY, vol.89, no.3, pp.397-405, 2017 (SCI-Expanded)
- VII. **Active Fault-Tolerant Control of UAV Dynamics against Sensor-Actuator Failures**  
Çalışkan F., HAJIYEV C.  
JOURNAL OF AEROSPACE ENGINEERING, vol.29, no.4, 2016 (SCI-Expanded)
- VIII. **Actuator Fault Diagnosis in a Boeing 747 Model via Adaptive Modified Two-Stage Kalman Filter**  
Çalışkan F., zhang Y., WU N. E., SHIN J.  
INTERNATIONAL JOURNAL OF AEROSPACE ENGINEERING, 2014 (SCI-Expanded)
- IX. **A review of in-flight detection and identification of aircraft icing and reconfigurable control**  
Çalışkan F., HAJIYEV C.  
PROGRESS IN AEROSPACE SCIENCES, vol.60, pp.12-34, 2013 (SCI-Expanded)
- X. **Estimation for Air Combat Games with Unknown Enemy Inputs**  
Caliskan F.  
JOURNAL OF AEROSPACE ENGINEERING, vol.25, no.2, pp.191-209, 2012 (SCI-Expanded)
- XI. **Aircraft Sensor and Actuator Fault Detection, Isolation, and Accommodation**  
Kiyak E., Kahvecioglu A., Çalışkan F.  
JOURNAL OF AEROSPACE ENGINEERING, vol.24, no.1, pp.46-58, 2011 (SCI-Expanded)
- XII. **A Robust Fault Detection and Isolation Method in Load Frequency Control Loops**  
Caliskan F., Genc I.  
IEEE TRANSACTIONS ON POWER SYSTEMS, vol.23, pp.1756-1767, 2008 (SCI-Expanded)
- XIII. **Aircraft icing detection, identification, and reconfigurable control based on Kalman filtering and**

## **neural networks**

Caliskan F., AYKAN R., HAJIYEV C.

JOURNAL OF AEROSPACE ENGINEERING, vol.21, no.2, pp.51-60, 2008 (SCI-Expanded)

- XIV. **Robust quadratic stable dynamic output compensator**  
Caliskan F.  
ELECTRICAL ENGINEERING, vol.90, no.3, pp.181-187, 2008 (SCI-Expanded)
- XV. **Sensor and control surface/actuator failure detection and isolation applied to F-16 flight dynamic**  
Hajiyev C., CALISKAN F.  
AIRCRAFT ENGINEERING AND AEROSPACE TECHNOLOGY, vol.77, no.2, pp.152-160, 2005 (SCI-Expanded)
- XVI. **Kalman filter and neural network-based icing a identification applied to A340 aircraft dynamics**  
Aykan R., HAJIYEV C., CALISKAN F.  
AIRCRAFT ENGINEERING AND AEROSPACE TECHNOLOGY, vol.77, no.1, pp.23-33, 2005 (SCI-Expanded)
- XVII. **Robust quadratic stabilization applied to design of continuous-time and discrete-time observers**  
Caliskan F., Zohdy M.  
ISA TRANSACTIONS, vol.42, no.3, pp.381-389, 2003 (SCI-Expanded)
- XVIII. **An approach to improve the offshore platform coordinates accuracy by using multichannel Kalman filtering**  
Hacızade C., Çalışkan F.  
ISA TRANSACTIONS, vol.42, no.1, pp.53-61, 2003 (SCI-Expanded)
- XIX. **Integrated sensor/actuator FDI and reconfigurable control for fault-tolerant flight control system design**  
Hacızade C., Çalışkan F.  
AERONAUTICAL JOURNAL, vol.105, no.1051, pp.525-533, 2001 (SCI-Expanded)
- XX. **Sensor/actuator fault diagnosis based on statistical analysis of innovation sequence and Robust Kalman Filtering**  
Hajiyev C., CALISKAN F.  
AEROSPACE SCIENCE AND TECHNOLOGY, vol.4, no.6, pp.415-422, 2000 (SCI-Expanded)
- XXI. **Design of robust discrete control with desirable quadratic stability**  
Çalışkan F., Zohdy M.  
ISA TRANSACTIONS, vol.39, no.4, pp.401-406, 2000 (SCI-Expanded)
- XXII. **Sensor fault detection in flight control systems based on the Kalman filter innovation sequence**  
Çalışkan F., Hacızade C.  
PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART I-JOURNAL OF SYSTEMS AND CONTROL ENGINEERING, vol.213, pp.243-248, 1999 (SCI-Expanded)
- XXIII. **Real-time implementation of an algorithm for self-repairing control systems based on LQG optimization**  
Caliskan F.  
PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART I-JOURNAL OF SYSTEMS AND CONTROL ENGINEERING, vol.212, pp.27-36, 1998 (SCI-Expanded)
- XXIV. **APPLICATION OF OBSERVERS TO MONITORING, FAILURE-DETECTION AND FAULT-DIAGNOSIS IN AIRCRAFT FLIGHT CONTROL**  
VEPA R., Çalışkan F.  
PROCEEDINGS OF THE INSTITUTION OF MECHANICAL ENGINEERS PART G-JOURNAL OF AEROSPACE ENGINEERING, vol.209, pp.65-73, 1995 (SCI-Expanded)

## **Articles Published in Other Journals**

- I. **Unknown Input Observer Based Robust Actuator Fault Detection and Isolation in Interconnected Power Systems**  
GENÇ V. M. İ., ÇALIŞKAN F.

Balkan Journal of Electrical and Computer Engineering, vol.7, pp.6-14, 2019 (Peer-Reviewed Journal)

**II. Aircraft sensor fault diagnosis based on Kalman filter innovation sequence**

Çalışkan F., Hacızade C.

Proceedings of the IEEE Conference on Decision and Control, vol.2, pp.1313-1314, 1998 (Scopus)

## **Refereed Congress / Symposium Publications in Proceedings**

**I. Neural Network Based Icing Identification and Fault Tolerant Control of a 340 Aircraft**

Caliskan F.

Conference of the World-Academy-of-Science-Engineering-and-Technology, Prague, Czech Republic, 27 - 29 July 2007, vol.22, pp.111-116

**II. Game estimators for air combat games with unknown enemy inputs**

Caliskan F., Mukai H., Katz I., Tanikawa A.

Annual American Control Conference (ACC 2003), Colorado, United States Of America, 04 June 2003 - 06 June 2006, pp.5381-5387

**III. EKF based surface fault detection and reconfiguration in aircraft control systems**

Caliskan F., Hajjiev C.

2000 American Control Conference (ACC 2000), Illinois, United States Of America, 28 - 30 June 2000, pp.1220-1224

**IV. Aircraft sensor fault diagnosis based on Kalman filter innovation sequence**

Caliskan F., Hajjiev C.

37th IEEE Conference on Decision and Control, Tama, Japan, 16 - 18 December 1998, pp.1313-1314

**V. Fault detection in flight control systems via innovation sequence of Kalman filter**

Hajjiev C., Caliskan F.

UKACC International Conference on Control 98, Swansea, United Kingdom, 1 - 04 September 1998, pp.1528-1533

## **Supported Projects**

Çalışkan F., Project Supported by Higher Education Institutions, Politik Platformlar Sensör/Eyleci Arızalarına Karşı Bir İHA'nın Yeniden Şekillendirilebilir Kontrolü, 2015 - 2018

Çalışkan F., Project Supported by Higher Education Institutions, İnsansız Hava Aracındaki Sensör ve Eyleyici Arıza Teşhisi, 2014 - 2018

Çalışkan F., Project Supported by Higher Education Institutions, A Review of in Flight Detection and Identification of Aircraft Icing and Reconfigurable, 2012 - 2018

Çalışkan F., Project Supported by Higher Education Institutions, Robust Actuator Fault Detection and Isolation in a Multi Area Interconnected Power System, 2011 - 2018

Çalışkan F., Project Supported by Higher Education Institutions, A340 Uçağının Sinir Ağlarıyla Buzlanma Kestirimi ve Arıza Toleranslı Kontrol, 2007 - 2018

Çalışkan F., Project Supported by Higher Education Institutions, Robot Kontrol Sistemlerindeki Algılayıcılarda Meydana Gelen Arızaların Tespit ve Teşhisi için Algoritmalar, 2005 - 2008

Çalışkan F., Project Supported by Higher Education Institutions, F-16 Uçağında Arıza Tespiti, Teşhisi ve Yeniden Yapılandırılabilir Kontrol, 2003 - 2005

## **Activities in Scientific Journals**

turkish journal of electrical and computer engineering, Editor, 2015 - Continues

## **Scientific Refereeing**

ISA Transactions, SCI Journal, August 2017

Proceedings of the Institution of Mechanical Engineers, Part G: Journal of Aerospace Engineering, SCI Journal, March 2017

## **Metrics**

Publication: 66

Citation (WoS): 272

Citation (Scopus): 417

H-Index (WoS): 9

H-Index (Scopus): 11

## **Non Academic Experience**

International University of Sarajevo

SUNY Binghamton University

Washington University in St. Louis

Oakland University