

## Prof. Dr. SAFFET AYASUN

### Kişisel Bilgiler

E-posta: saffetayasun@gazi.edu.tr

Web: <https://avesis.gazi.edu.tr/saffetayasun>

### Uluslararası Araştırmacı ID'leri

ORCID: 0000-0002-6785-3775

Yoksis Araştırmacı ID: 42597

### Eğitim Bilgileri

Doktora, Drexel University, Elektrik-Bilgisayar Mühendisliği, Amerika Birleşik Devletleri 1997 - 2002

Yüksek Lisans, Drexel University, Mühendislik Fakültesi Elektrik Mühendisliği, Amerika Birleşik Devletleri 1995 - 1998

Lisans, Gazi Üniversitesi, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği Bölümü, Türkiye 1984 - 1989

### Yabancı Diller

İngilizce, C1 İleri

### Yaptığı Tezler

Doktora, Singularity analysis of differential-algebraic power system models, Drexel University, Elektrik-Bilgisayar Mühendisliği, 2002

Yüksek Lisans, INVESTIGATION OF INTER-AREA AVAILABLE TRANSFER CAPABILITY, Drexel University, Mühendislik Fakültesi Elektrik Mühendisliği, 1998

### Araştırma Alanları

Güç Sistemlerinin Analizi , Enerji İletimi ve Dağıtımı , Yenilenebilir Enerji

### Akademik Unvanlar / Görevler

Prof. Dr., Gazi Üniversitesi, Mühendislik Fakültesi, Elektrik - Elektronik Mühendisliği, 2019 - Devam Ediyor

Prof. Dr., Niğde Ömer Halisdemir Üniversitesi, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği Bölümü, 2014 - 2019

Doç. Dr., Niğde Ömer Halisdemir Üniversitesi, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği Bölümü, 2009 - 2014

Yrd. Doç. Dr., Niğde Ömer Halisdemir Üniversitesi, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği Bölümü, 2004 - 2009

Araştırma Görevlisi, Niğde Ömer Halisdemir Üniversitesi, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği Bölümü, 1994 - 2004

## **AKADEMİK İDARI DENEYİM**

Niğde Ömer Halisdemir Üniversitesi, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği Bölümü, 2018 - 2019

Niğde Ömer Halisdemir Üniversitesi, Mühendislik Fakültesi, Elektrik-Elektronik Mühendisliği Bölümü, 2009 - 2019

Niğde Ömer Halisdemir Üniversitesi, Yabancı Diller Yüksekokulu, 2014 - 2018

Niğde Ömer Halisdemir Üniversitesi, Yabancı Diller Yüksekokulu, 2011 - 2014

## **Verdiği Dersler**

Control Systems I, Lisans, 2021 - 2022

Kontrol Sistemleri I, Lisans, 2020 - 2021

Devre Teorisi I, Lisans, 2020 - 2021

Mühendislikte Doğrusal Sistem Teorisi, Doktora, 2020 - 2021

## **Yönetilen Tezler**

AYASUN S., Elektrikli Araçlar Ve Dinamik Talep Kontrolü İçeren İki Bölgeci Yük Frekans Kontrol Sisteminin Zaman Gecikmesine Bağlı Kararlılık Analizi, Yüksek Lisans, B.TEK(Öğrenci), 2021

AYASUN S., Kesir dereceli PI kontrolör içeren zaman gecikmeli jeneratör uyarma kontrol sisteminin kararlılık analizi, Yüksek Lisans, K.GÖKBULUT(Öğrenci), 2019

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AYASUN S., Ağ üzerinden kontrol edilen haberleşme zaman gecikmeli güç elektroniği çeviricilerinin kararlılık analizi, Yüksek Lisans, A.SARI(Öğrenci), 2018

AYASUN S., deneme, Yüksek Lisans, H.GÜNDÜZ(Öğrenci), 2018

AYASUN S., Kesirli dereceli kontrolör içeren zaman gecikmeli yük frekans kontrol sistemlerinin kararlılık analizi, Yüksek Lisans, S.HORZUM(Öğrenci), 2018

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## **SCI, SSCI ve AHCI İndekslerine Giren Dergilerde Yayınlanan Makaleler**

- I. **Impact of virtual inertia and damping control on stability delay margins of load frequency control systems with renewable energy sources**  
Hasen S. A., AYDIN Ö., AYASUN S., Sönmez Ş.  
ELECTRICAL ENGINEERING, cilt.106, sa.1, ss.323-341, 2024 (SCI-Expanded)
- II. **Robust stability region analysis of time-delayed load frequency control systems with EVs aggregator using Kharitonov theorem**  
Naveed A., Sönmez Ş., AYASUN S., Iqbal S., Zeinoddini-Meymand H., Kamel S.  
IET Generation, Transmission and Distribution, cilt.17, sa.19, ss.4386-4398, 2023 (SCI-Expanded)
- III. **Delay-Dependent Stability Analysis of Multi Area LFC-EVs System**  
Sari A., Sonmez S., AYASUN S., Kabalci Y.  
IEEE Transactions on Smart Grid, cilt.14, sa.3, ss.2178-2188, 2023 (SCI-Expanded)
- IV. **Enhancement of Stability Region by Virtual Inertia and Damping Control for Micro-Grids with Communication Time Delay**  
Hasen S. A., SÖNMEZ Ş., AYASUN S.  
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- V. **Stability delay margin computation of multi-area load frequency control system with electric vehicle using critical eigenvalue tracing method**  
AYDIN Ö., Sönmez Ş., AYASUN S.  
Transactions of the Institute of Measurement and Control, cilt.45, sa.5, ss.874-885, 2023 (SCI-Expanded)
- VI. **Computation of stability regions for time-delayed two-area load frequency control system including dynamic demand response Dinamik talep cevabı içeren zaman gecikmeli iki bölgesi yük frekans kontrol sistemlerinin kararlılık bölgelerinin hesaplanması**  
Katipoğlu D., Sönmez Ş., AYASUN S.  
Journal of the Faculty of Engineering and Architecture of Gazi University, cilt.39, sa.1, ss.431-442, 2023 (SCI-Expanded)
- VII. **The Effect of Virtual Inertia and Damping Control on the Stability Region of Load Frequency Control Systems with Time Delays**  
Hasen S., AYDIN Ö., AYASUN S., Sönmez Ş.  
Electric Power Components and Systems, cilt.51, sa.5, ss.438-451, 2023 (SCI-Expanded)
- VIII. **Determination of stability delay margins for multi-area load frequency control systems with incommensurate time delays through eigenvalue tracing method**  
AYDIN Ö., SÖNMEZ Ş., AYASUN S.  
INTERNATIONAL JOURNAL OF ELECTRICAL POWER & ENERGY SYSTEMS, cilt.137, 2022 (SCI-Expanded)
- IX. **Identification of gain and phase margins based robust stability regions for a time-delayed micro-grid system including fractional-order controller in presence of renewable power generation**  
Gunduz H., SÖNMEZ Ş., AYASUN S.  
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- X. **Inserting of heuristic techniques into the stability regions for multiarea load frequency control systems with time delays**  
SAKA M., SÖNMEZ Ş., EKE İ., Gozde H., TAPLAMACIOĞLU M. C., AYASUN S.  
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, cilt.30, sa.6, ss.2286-2305, 2022 (SCI-Expanded)
- XI. **Stability regions in time delayed two-area LFC system enhanced by EVs**  
Naveed A., Sonmez S., AYASUN S.  
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, cilt.30, sa.1, ss.249-263, 2022 (SCI-Expanded)
- XII. **Impact of participation ratios on the stability delay margins computed by direct method for multiple-area load frequency control systems with demand response**  
KATİPOĞLU D., Sonmez S., AYASUN S., Naveed A.

AUTOMATIKA, cilt.63, sa.1, ss.185-197, 2022 (SCI-Expanded)

- XIII. **Enhancement of stability delay margins by virtual inertia control for microgrids with time delay**  
Hasen S. A., SÖNMEZ Ş., AYASUN S.  
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, cilt.30, sa.6, ss.2221-2238, 2022 (SCI-Expanded)
- XIV. **Impact of electric vehicles aggregators with communication delays on stability delay margins of two-area load frequency control system**  
Naveed A., Sonmez S., AYASUN S.  
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- XV. **Impact of Electric Vehicle Aggregator with Communication Time Delay on Stability Regions and Stability Delay Margins in Load Frequency Control System**  
Naveed A., Sonmez S., Ayasun S.  
JOURNAL OF MODERN POWER SYSTEMS AND CLEAN ENERGY, cilt.9, sa.3, ss.595-601, 2021 (SCI-Expanded)
- XVI. **Impact of load sharing schemes on the stability delay margins computed by Rekasius substitution method in load frequency control system with electric vehicles aggregator**  
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- XVII. **GAIN-PHASE MARGINS BASED STABILITY ANALYSIS OF TIME DELAYED HYBRID LOAD FREQUENCY CONTROL SYSTEM**  
EROL H., AYASUN S.  
REVUE ROUMAINE DES SCIENCES TECHNIQUES-SERIE ELECTROTECHNIQUE ET ENERGETIQUE, cilt.66, sa.2, ss.119-124, 2021 (SCI-Expanded)
- XVIII. **The effect of demand response control on stability delay margins of load frequency control systems with communication time-delays**  
Katipoglu D., Sonmez S., AYASUN S., Naveed A.  
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- XIX. **Computation of Robust PI-Based Pitch Controller Parameters for Large Wind Turbines**  
Turksoy O., Ayasun S., Hames Y., Sonmez S.  
CANADIAN JOURNAL OF ELECTRICAL AND COMPUTER ENGINEERING-REVUE CANADIENNE DE GENIE ELECTRIQUE ET INFORMATIQUE, cilt.43, sa.1, ss.57-63, 2020 (SCI-Expanded)
- XX. **Gain-phase margins-based delay-dependent stability analysis of pitch control system of large wind turbines**  
Turksoy O., Ayasun S., Hames Y., Sonmez S.  
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- XXI. **Gain and phase margins-based delay margin computation of load frequency control systems using Rekasius substitution**  
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- XXII. **Gain and phase margins based stability analysis of micro grid systems with time delay by using Rekasius substitution**  
Gunduz H., Ayasun S., Sonmez S.  
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- XXIII. **Gain and phase margin based stability analysis of time delayed single area load frequency control system with fractional order PI controller**  
Sonmez S., Ayasun S.  
JOURNAL OF THE FACULTY OF ENGINEERING AND ARCHITECTURE OF GAZI UNIVERSITY, cilt.34, sa.2, ss.946-959,

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- XXIV. **Gain and phase margins based delay-dependent stability analysis of single-area load frequency control system with constant communication time delay**  
Sonmez S., Ayasun S.  
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- XXV. **Computation of PI Controllers Ensuring Desired Gain and Phase Margins for Two-Area Load Frequency Control System with Communication Time Delays**  
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- XXVI. **Comprehensive gain and phase margins based stability analysis of micro-grid frequency control system with constant communication time delays**  
Guenduez H., Soenmez S., Ayasun S.  
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- XXVII. **An Exact Method for Computing Delay Margin for Stability of Load Frequency Control Systems With Constant Communication Delays**  
Sonmez S., Ayasun S., Nwankpa C. O.  
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- XXVIII. **Stability Region in the Parameter Space of PI Controller for a Single-Area Load Frequency Control System With Time Delay**  
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- XXIX. **Effect of load increase and power system stabilizer on stability delay margin of a generator excitation control system**  
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TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, cilt.24, sa.6, ss.5183-5195, 2016 (SCI-Expanded)
- XXX. **Modeling and Design Optimization of Variable-Speed Wind Turbine Systems**  
Eminoglu U., Ayasun S.  
ENERGIES, cilt.7, sa.1, ss.402-419, 2014 (SCI-Expanded)
- XXXI. **Computation of Stability Delay Margin of Time-Delayed Generator Excitation Control System with a Stabilizing Transformer**  
Ayasun S., Eminoglu U., Sonmez S.  
MATHEMATICAL PROBLEMS IN ENGINEERING, cilt.2014, 2014 (SCI-Expanded)
- XXXII. **Stability analysis of time-delayed DC motor speed control system**  
Ayasun S.  
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, cilt.21, sa.2, ss.381-393, 2013 (SCI-Expanded)
- XXXIII. **A Comprehensive Review and Adequacy Evaluation of Voltage Stability Indices for Modern Distribution Systems**  
Eminoglu U., Hocaoglu M. H., Ayasun S.  
INTERNATIONAL REVIEW OF ELECTRICAL ENGINEERING-IREE, cilt.5, sa.2, ss.698-708, 2010 (SCI-Expanded)
- XXXIV. **Probabilistic Evaluation of Small-Signal Stability of Power Systems with Time Delays**  
Ayasun S., Nwankpa C. O.  
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- XXXV. **Stability analysis of a generator excitation control system with time delays**  
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- XXXVI. **Computation of time delay margin for power system small-signal stability**  
Ayasun S.  
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- XXXVII. **Realization of Power Electronic Converter Based DC Motor Speed Control Methods Using MATLAB/Simulink**  
Gelen A., Ayasun S.  
INTERNATIONAL JOURNAL OF ENGINEERING EDUCATION, cilt.25, sa.1, ss.33-41, 2009 (SCI-Expanded)
- XXXVIII. **Effects of algebraic singularities on the voltage dynamics of differential-algebraic power system model**  
Ayasun S.  
EUROPEAN TRANSACTIONS ON ELECTRICAL POWER, cilt.18, sa.6, ss.547-561, 2008 (SCI-Expanded)
- XXXIX. **DC motor speed control methods using MATLAB/Simulink and their integration into undergraduate electric machinery courses**  
Ayasun S., Karbeyaz G.  
COMPUTER APPLICATIONS IN ENGINEERING EDUCATION, cilt.15, sa.4, ss.347-354, 2008 (SCI-Expanded)
- XL. **Modeling and stability analysis of a simulation-stimulation interface for hardware-in-the-loop applications**  
Ayasun S., Fischl R., Vallieu S., Braun J., Cadirli D.  
SIMULATION MODELLING PRACTICE AND THEORY, cilt.15, sa.6, ss.734-746, 2007 (SCI-Expanded)
- XLI. **Voltage stability toolbox for power system education and research**  
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- XLII. **Transformer tests using MATLAB/Simulink and their integration into undergraduate electric machinery courses**  
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- XLIII. **A sensitivity approach for computation of the probability density function of critical clearing time and probability of stability in power system transient stability analysis**  
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- XLIV. **An efficient method to compute singularity induced bifurcations of decoupled parameter-dependent differential-algebraic power system model**  
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- XLV. **Induction motor tests using MATLAB/Simplink and their integration into undergraduate electric machinery courses**  
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- XLVI. **Computation of singular and singularity induced bifurcation points of differential-algebraic power system model**  
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## **Diğer Dergilerde Yayınlanan Makaleler**

- I. **Yük frekans kontrol sistemlerinde gürbüz kararlılık zaman gecikmesi paylarının belirlenmesi**  
GÜL K. N., sonmez s., Ayasun S.  
Niğde Ömer Halisdemir Üniversitesi Mühendislik Bilimleri Dergisi, cilt.13, sa.2, ss.611-620, 2024 (Hakemli Dergi)
- II. **Online Parameter Identification of a Simplified Composite Load Model by Voltage Sag Events**  
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Turkish Journal of Electrical Power and Energy Systems, cilt.2, sa.1, ss.21-31, 2022 (Hakemli Dergi)
- III. **Zaman Gecikmeli Elektrik Güç Sistemlerinin Gecikmeye Bağlı Kararlılık Bölgelerinin Hesaplanması**

- Sönmez Ş., Ayasun S.  
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- IV. **Time delay margins computation for stability of load frequency control in hybrid renewable energy power generation/storage system**  
Erol H., Ayasun S.  
El-Cezeri Fen ve Mühendislik Dergisi, cilt.9, sa.2, ss.382-393, 2021 (Scopus)
- V. **Delay-dependent Stability Analysis Considering Dynamic Demand Response and Electric Vehicle Aggregator Integration in Two-Area Load Frequency Control Systems**  
SÖNMEZ Ş., AYASUN S.  
Turkish Journal of Electrical Power and Energy Systems, cilt.1, sa.1, ss.20-25, 2021 (Hakemli Dergi)
- VI. **Time Delay Margins Computation for Stability of Hybrid Power Systems**  
Erol H., Ayasun S.  
JOURNAL OF POLYTECHNIC-POLITEKNİK DERGISI, cilt.23, sa.4, ss.1131-1139, 2020 (ESCI)
- VII. **REKASİUS YÖNTEMİ KULLANILARAK ZAMAN GECİKMELİ JENERATÖR UYARMA KONTROL SİSTEMİNİN MAKSİMUM ZAMAN GECİKMESİNİN HESAPLANMASI**  
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- VIII. **Ağ Üzerinden Kontrol Edilen Yükselten DA-DA Dönüştürücünün Zaman Gecikmesine Bağlı Kararlılık Analizi**  
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- IX. **Stability Region of Fractional-Order PI Controller for a Single-Area Load Frequency Control System with Communication Time Delay**  
SÖNMEZ Ş., AYASUN S.  
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- X. **Stability regions in controller parameter space of DC motor speed control system with communication delays**  
SÖNMEZ Ş., AYASUN S.  
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- XI. **IMPACT OF GAIN PHASE MARGINS ON THE DELAYMARGIN FOR STABILITY OF DC MOTOR SPEEDCONTROL SYSTEM WITH TIME DELAYS**  
GÜNDÜZ H., AYASUN S.  
Journal of Basic and Applied ResearchInternational, cilt.17, sa.4, ss.302-311, 2016 (Hakemli Dergi)
- XII. **An exact Method to Compute Time Delay Margin for Stability of Time Delayed Generator Excitation Control System**  
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- XIII. **Computation of Time Delay Margins for Stability of a Single Area Load Frequency Control System with Communication Delays**  
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- XVI. **Bir Tekstil Fabrikasının Harmonik Analizi**

## Kitap & Kitap Bölümleri

- I. **IMPACT OF VIRTUAL INERTIA AND DEMAND RESPONSE CONTROLS ON STABILITY DELAY MARGINS IN LOAD FREQUENCY CONTROL SYSTEM**  
Naveed A., Aydın Ö., SÖNMEZ Ş., AYASUN S.  
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- II. **Havai Hat İletkenleri ve Yer altı Kabloları**  
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- I. **Robust Stability Region for Time-Delayed Single-Area LFC-EV System**  
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- III. **The Impact of the EV Aggregator on the Stability Regions of the Time-Delayed LFC-EV with FOPI Controller**  
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- IV. **Impact of Virtual Inertia on Stability Delay Margins of Micro grids with Communication Time Delay**  
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- V. **Adaptive Notch Filter Design for Flexible Modes of Guided Munitions**  
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- VI. **Delay Margin Computation of Generator Excitation Control System with Incommensurate Time Delays Using Critical Eigenvalue Tracing Method**  
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- VII. **Switching Based MIMO Robust Autopilot Design: A Munition Example**  
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- VIII. **Delay-Dependent Stability Analysis of a Single-Area Load Frequency Control System Enhanced by Electric Vehicles Aggregator and Demand Response Control**



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- X. **Damping Based Relative Stability Regions in Load Frequency Control System with Plug-in Electric Vehicles and Communication Delays**  
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- XI. **Kesirli Dereceli PI Denetleyici İçeren Doğru Akım Motor Hız Kontrol Sisteminin Zaman Gecikmesine Bağlı Kararlılık Analizi**  
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- XII. **Identification of Stability Delay Margin for Load Frequency Control System with Electric Vehicles Aggregator using Rekasius Substitution**  
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- XIII. **Stability Regions in the Parameter Space of PI Controller for LFC System with EVs Aggregator and Incommensurate Time Delays**  
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- XX. **Yükselten DA-DA Dönüştürücünün Frekans Tarama Testi Kullanılarak Kararlılık Analizi**

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- XXI. **Dinamik Talep Cevabı (DTC) İçeren Haberleşme Zaman Gecikmeli Mikro Şebekenin Kararlık Analizi**  
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- XXVI. **Computation of all stabilizing PI controller parameters of hybrid load frequency control system with communication time delay**  
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- XXX. **Effects of PWM Chopper Drive on the Torque-Speed Characteristic of DC Motor**  
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## Desteklenen Projeler

Ayasun S., TÜBİTAK Projesi, Elektrikli Araç Grupları ve Dinamik Talep Cevabı İçeren Yük Frekans Kontrol Sistemlerinin Zaman Gecikmesine Bağlı Kararlılık Analizi ve Gürbüz Denetleyici Tasarımı, 2019 - 2021

## Metrikler

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