

## Doç.Dr. SERAP AYDIN

### Kişisel Bilgiler

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### Biyografi

Her research interests are futuristic neuro-marker development and neuro-modelling in the field of behavioral & computational neuroscience. She has studied on neuro-physiological experimental paradigms and data processing/analysis methods as well as smart classifiers in diagnose.

### Yabancı Diller

İngilizce, C1 İleri

### Sertifika, Kurs ve Eğitimler

Sağlık ve Tıp, 2.TEORİ-PRATİK YÖNLERİ İLE NÖROPLASTİSİTE NÖROMODÜLASYON KURSU, Türk Nöroloji Derneği (Turkish Neurology Society), 2020  
Eğitim Yönetimi ve Planlama, EĞİTİMCİLERİN EĞİTİMİ, Hacettepe Üniversitesi, Yaşam Boyu Öğrenme Merkezi, 2018  
Sağlık ve Tıp, İYİ KLİNİK UYGULAMALAR, Bahçeşehir Üniversitesi, Tıp Fakültesi, 2013

### Yaptığı Tezler

Doktora, Extraction of auditory evoked potentials from ongoing EEG, Orta Doğu Teknik Üniversitesi, Fen Bilimleri Enstitüsü, Biyomedikal Mühendisliği Anabilim Dalı, 2005

### Araştırma Alanları

Tıp, Sağlık Bilimleri, Temel Tıp Bilimleri, Biyofizik, Biyoistatistik ve Tıp Bilişimi, Dahili Tıp Bilimleri, Psikiyatri

### Verdiği Dersler

Biomedial Signal Analysis, Lisans, 2020 - 2021  
Elektriksel Korteks Aktiviteleri: EEG ve Uyandırılmış Potansiyeller, Lisans, 2020 - 2021  
Electrical Correlates of the Perceptual Functions in the Cortex, Lisans, 2020 - 2021  
Electrical Correlates of the Perceptual Functions in the Cortex, Lisans, 2020 - 2021  
Electrical Activity of the Cortex: EEG and Evoked Potentials, Lisans, 2020 - 2021  
Biyomedikal Sinyal Analizi, Lisans, 2020 - 2021  
Korteksteki Algılama Fonksiyonlarının Elektriksel İlintileri, Lisans, 2020 - 2021  
Innovative Emotion Recognition Paradigms, Lisans, 2020 - 2021

Davranışsal ve Hesaplamalı Sinirbilim (Behavioural and Computational Neuroscience), Doktora, 2020 - 2021  
Electrical Simulation of Circulation and Respiratory Systems, Lisans, 2020 - 2021  
Futuristic Technological Trends, Lisans, 2020 - 2021  
Futuristik Teknolojik Gelişmeler (Futuristic Technological Trends), Lisans, 2019 - 2020  
Dolaşım ve Solunum Sistemlerinin Elektriksel Simülasyonu, Lisans, 2017 - 2018

## Yönetilen Tezler

Aydın S., Smart Classification of Normal and Aggressive Muscle Actions, Yüksek Lisans, K.AYDEMİR(Öğrenci), 2018  
Aydın S., Entropy Based Methods to Analyze Single Channel Electrophysiological Brain Activities in Discriminating Emotional States, Yüksek Lisans, A.YILDIRIM(Öğrenci), 2016  
Aydın S., ANOVA Analysis of Phase Synchronization Estimations in Contrasting Emotional States by Means of EEG, Yüksek Lisans, Ö.TIĞLI(Öğrenci), 2016  
Aydın S., A Review on Brain Connectivity Measurements Used for Emotion Recognition, Yüksek Lisans, F.VOLKAN(Öğrenci), 2016  
Aydın S., Intercorrelation between singular spectrum of EEG subbands and emotional states, Yüksek Lisans, A.MARAŞ(Öğrenci), 2016

## SCI, SSCI ve AHCI İndekslerine Giren Dergilerde Yayımlanan Makaleler

- I. **Prediction of Reaction Time and Vigilance Variability From Spatio-Spectral Features of Resting-State EEG in a Long Sustained Attention Task**  
Torkamani-Azar M., Kanik S. D. , Aydın S., Cetin M.  
IEEE JOURNAL OF BIOMEDICAL AND HEALTH INFORMATICS, cilt.24, ss.2550-2558, 2020 (SCI İndekslerine Giren Dergi)
- II. **Deep Learning Classification of Neuro-Emotional Phase Domain Complexity Levels Induced by Affective Video Film Clips**  
AYDIN S.  
IEEE JOURNAL OF BIOMEDICAL AND HEALTH INFORMATICS, cilt.24, ss.1695-1702, 2020 (SCI İndekslerine Giren Dergi)
- III. **Neuro-Cortical Activity Variations Depends on Psycho-Physiological States**  
AYDIN S.  
ACTA PHYSIOLOGICA, cilt.227, ss.98, 2019 (SCI İndekslerine Giren Dergi)
- IV. **Investigation of Rumination and Distraction Emotion Regulation Strategies from a Neuro-Cognitive Point of View**  
AYDIN S., Solak N.  
ACTA PHYSIOLOGICA, cilt.227, ss.46, 2019 (SCI İndekslerine Giren Dergi)
- V. **The impact of musical experience on neural sound encoding performance**  
AYDIN S., Guducu C., Kutluk F., Oniz A., Ozgoren M.  
NEUROSCIENCE LETTERS, cilt.694, ss.124-128, 2019 (SCI İndekslerine Giren Dergi)
- VI. **Comparison of hemispheric asymmetry measurements for emotional recordings from controls**  
Aydın S., Demirtaş S., Tunga M. A. , Ateş K.  
NEURAL COMPUTING & APPLICATIONS, cilt.30, ss.1341-1351, 2018 (SCI İndekslerine Giren Dergi)
- VII. **Cortical correlations in wavelet domain for estimation of emotional dysfunctions**  
Aydın S., Demirtaş S., Yetkin S.  
NEURAL COMPUTING & APPLICATIONS, cilt.30, ss.1085-1094, 2018 (SCI İndekslerine Giren Dergi)
- VIII. **Decreased global field synchronization of multichannel frontal EEG measurements in obsessive-compulsive disorders**  
Ozcoban M. A. , Tan O., Aydın S., Akan A.

- MEDICAL & BIOLOGICAL ENGINEERING & COMPUTING, cilt.56, ss.331-338, 2018 (SCI İndekslerine Giren Dergi)
- IX. **Best method for analysis of brain oscillations in healthy subjects and neuropsychiatric diseases**  
Basar E., Golbasi B. T. , Tulay E., Aydin S., Basar-Eroglu C.  
INTERNATIONAL JOURNAL OF PSYCHOPHYSIOLOGY, cilt.103, ss.22-42, 2016 (SCI İndekslerine Giren Dergi)
- X. **Emotion Recognition with Eigen Features of Frequency Band Activities Embedded in Induced Brain Oscillations Mediated by Affective Pictures**  
Aydin S., Demirtas S., Ates K., Tunga M. A.  
INTERNATIONAL JOURNAL OF NEURAL SYSTEMS, cilt.26, 2016 (SCI İndekslerine Giren Dergi)
- XI. **EEG complexity and frequency in chronic residual schizophrenia**  
Tan O., Aydin S., Hizli Sayar G., Gürsoy D.  
ANADOLU PSIKIYATRI DERGISI-ANATOLIAN JOURNAL OF PSYCHIATRY, cilt.17, ss.385-392, 2016 (SCI İndekslerine Giren Dergi)
- XII. **Mutual Information Analysis of Sleep EEG in Detecting Psycho-Physiological Insomnia**  
Aydin S., Tunga M. A. , Yetkin S.  
JOURNAL OF MEDICAL SYSTEMS, cilt.39, 2015 (SCI İndekslerine Giren Dergi)
- XIII. **Classification of Obsessive Compulsive Disorder by EEG Complexity and Hemispheric Dependency Measurements**  
Aydin S., Arica N., Ergul E., Tan O.  
INTERNATIONAL JOURNAL OF NEURAL SYSTEMS, cilt.25, 2015 (SCI İndekslerine Giren Dergi)
- XIV. **Artificial Apnea Classification with Quantitative Sleep EEG Synchronization**  
Aksahin M., Aydin S., Firat H., Eroğul O.  
JOURNAL OF MEDICAL SYSTEMS, cilt.36, ss.139-144, 2012 (SCI İndekslerine Giren Dergi)
- XV. **Computer Based Synchronization Analysis on Sleep EEG in Insomnia**  
Aydin S.  
JOURNAL OF MEDICAL SYSTEMS, cilt.35, ss.517-520, 2011 (SCI İndekslerine Giren Dergi)
- XVI. **Singular Spectrum Analysis of Sleep EEG in Insomnia**  
Aydin S., Saraoglu H. M. , Kara S.  
JOURNAL OF MEDICAL SYSTEMS, cilt.35, ss.457-461, 2011 (SCI İndekslerine Giren Dergi)
- XVII. **APPLICATION OF LINEAR PROJECTION ALGORITHMS FOR REDUCTION OF BACKGROUND EEG NOISE**  
Aydin S.  
BIOMEDICAL ENGINEERING-APPLICATIONS BASIS COMMUNICATIONS, cilt.22, ss.19-24, 2010 (SCI İndekslerine Giren Dergi)
- XVIII. **Determination of autoregressive model orders for seizure detection**  
Aydin S.  
TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, cilt.18, ss.23-30, 2010 (SCI İndekslerine Giren Dergi)
- XIX. **Log Energy Entropy-Based EEG Classification with Multilayer Neural Networks in Seizure**  
Aydin S., Saraoglu H. M. , Kara S.  
ANNALS OF BIOMEDICAL ENGINEERING, cilt.37, ss.2626-2630, 2009 (SCI İndekslerine Giren Dergi)
- XX. **THE ROLE OF BIOMEDICAL ENGINEERING PROFESSIONS IN MEDICAL EDUCATION**  
Aydin S.  
BIOMEDICAL ENGINEERING-APPLICATIONS BASIS COMMUNICATIONS, cilt.21, ss.265-270, 2009 (SCI İndekslerine Giren Dergi)
- XXI. **A new combination: scale-space filtering of projected brain activities**  
Aydin S.  
MEDICAL & BIOLOGICAL ENGINEERING & COMPUTING, cilt.47, ss.435-440, 2009 (SCI İndekslerine Giren Dergi)
- XXII. **Comparison of Power Spectrum Predictors in Computing Coherence Functions for Intracortical EEG Signals**  
Aydin S.  
ANNALS OF BIOMEDICAL ENGINEERING, cilt.37, ss.192-200, 2009 (SCI İndekslerine Giren Dergi)
- XXIII. **Tikhonov regularized solutions for improvement of signal-to-noise ratio in case of auditory-evoked**

## potentials

Aydin S.

MEDICAL & BIOLOGICAL ENGINEERING & COMPUTING, cilt.46, ss.1051-1056, 2008 (SCI İndekslerine Giren Dergi)

### XXIV. Comparison of basic linear filters in extracting auditory Evoked Potentials

Aydin S.

TURKISH JOURNAL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES, cilt.16, ss.111-123, 2008 (SCI İndekslerine Giren Dergi)

## Diğer Dergilerde Yayınlanan Makaleler

### I. Obsesif Kompulsif Bozukluk Hastalarında Klinik Değerlendirme Ölçekleri ile EEG Senkronizasyonu Arasındaki Korelasyon

AYDIN S., TAN O., ÖZÇOBAN M. A. , AKAN A.

Sakarya University Journal of Science, cilt.22, ss.667-670, 2018 (Hakemli Üniversite Dergisi)

### II. Electroencephalographic Complexity and Decreased Randomness in Drug-Naive Obsessive-Compulsive Patients

Tan O., Aydin S.

DUSUNEN ADAM-JOURNAL OF PSYCHIATRY AND NEUROLOGICAL SCIENCES, cilt.30, ss.101-112, 2017 (ESCI İndekslerine Giren Dergi)

## Hakemli Kongre / Sempozyum Bildiri Kitaplarında Yer Alan Yayınlar

### I. Spontan Nöro-Kortikal Aktivitelerde Bilişsel Duygu Düzenleme Yeteneklerinin Etkisi (Influence of Emotion Regulation Strategies in Spontaneous Neuro-Cortical Activities)

Aydin S., Akan B.

28. IEEE SİNYAL İŞLEME ve İLETİŞİM UYGULAMALARI KURULTAYI, Gaziantep, Türkiye, 5 - 07 Ekim 2020, ss.1-4

### II. Ruminasyon ve Dikkat Dağıtma Duygu Düzenleme Stratejilerinin Nörobilişsel Perspektiften İncelenmesi

AYDIN S., SOLAK ÖRSES N.

45. ULUSAL FİZYOLOJİ KONGRESİ, İzmir, Türkiye, 31 Ekim - 03 Kasım 2019

### III. Psiko-Fizyolojik Duruma Bağlı Nöro-Kortikal Aktivite Değişimleri

AYDIN S.

45. ULUSAL FİZYOLOJİ KONGRESİ, İzmir, Türkiye, 31 Ekim - 03 Kasım 2019

### IV. Prediction of Response Time and Vigilance Score in a Sustained Attention Task from Pre-Trial Phase Synchrony using Deep Neural Networks

Torkamani Azar M., demir s., Ahmed S. A. A. , AYDIN S., ÇETİN M.

41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 23 - 27 Temmuz 2019

### V. A case study on auditory brain activations relative to musical experience by means of eeg complexity levels

Aydin S., Gudücü Ç., Kutluk F., Özgören A. O. , Özgören M.

26th IEEE Signal Processing and Communications Applications Conference, SIU 2018, İzmir, Türkiye, 2 - 05 Mayıs 2018, ss.1-4

### VI. Smart classification of normal and aggressive muscle actions Normal ve Agresif Kas Hareketlerinin Akıllı Sınıflandırması

Aydemir K., Aydin S.

26th IEEE Signal Processing and Communications Applications Conference, SIU 2018, İzmir, Türkiye, 2 - 05 Mayıs 2018, ss.1-4

- VII. **Improving cognitive functions of dyslexies using multi-sensory learning and EEG neurofeedback**  
Eroglu G., Aydin S., Cetin M., Balcisoy S.  
26th IEEE Signal Processing and Communications Applications Conference, SIU 2018, İzmir, Türkiye, 2 - 05 Mayıs 2018, ss.1-4
- VIII. **Classification of Band-Specific Regional Hemispheric Connectivity in Obsessive Compulsive Disorder**  
Aydin S., Tan O.  
25th Signal Processing and Communications Applications Conference (SIU), Antalya, Türkiye, 15 - 18 Mayıs 2017
- IX. **Discrimination of Psychotic Symptoms from Controls Through Data Mining Methods Based on Emotional Principle Components**  
Maras A., Aydin S.  
International Conference on Medical and Biological Engineering in Bosnia and Herzegovina (CMBEBIH), Sarajevo, Bosna-Hersek, 16 - 18 Mart 2017, cilt.62, ss.26-30
- X. **Intercorrelation between singular spectrum of EEG sub-bands and emotional states**  
AYDIN S., MARAŞ A.  
ELECO2016, Türkiye, 1 - 03 Aralık 2016, ss.486-490
- XI. **Classification of EEG synchronization values of obsessive compulsive disorders patients using Support Vector Machine Method**  
TAN O., AYDIN S., ÖZÇOBAN M. A.  
2016 Medical Technologies National Congress (TIPTEKNO), Antalya, Turkey, Türkiye, 27 - 29 Ekim 2016
- XII. **Support Vector Machines in Classifying Normal and Aggressive Muscle Actions of Electrophysiological Entropies**  
Aydin S., Akyuz S.  
National Conference on Electrical, Electronics and Biomedical Engineering (ELECO), Bursa, Türkiye, 1 - 03 Aralık 2016, ss.526-529
- XIII. **Estimation of Cross Correlation in Classifying Neuromuscular Activities**  
Aydin S.  
National Conference on Electrical, Electronics and Biomedical Engineering (ELECO), Bursa, Türkiye, 1 - 03 Aralık 2016, ss.474-476
- XIV. **Investigation of Obsessive Compulsive Disorder with FFT Dipol Approximation by Means of EEG**  
Ozcoban M. A. , Aydin S., Kara S., Tan O.  
Medical Technologies National Conference (TIPTEKNO), Bodrum, Türkiye, 15 - 18 Ekim 2015
- XV. **Uyku Bozukluğunda Beynin Hemisferik ve Bağlı Nöral Dinamikleri**  
AYDIN S.  
26. Ulusal Biyofizik Kongresi, Tokat, Türkiye, 9 - 12 Eylül 2014
- XVI. **Nöropsikiyatride Çok Kanallı Hemisferik EEG Dinamikleri ve Akıllı Sınıflandırma**  
AYDIN S., ARICA N., TAN O., ERGÜL E.  
26. Ulusal Biyofizik Kongresi, Tokat, Türkiye, 9 - 12 Eylül 2014
- XVII. **[http://www.turkbiyofizik.com/Kongre\\_ozetleri/26.pdf](http://www.turkbiyofizik.com/Kongre_ozetleri/26.pdf)**  
AYDIN S.  
26. Ulusal Biyofizik Kongresi, Tokat, Türkiye, 09 Eylül 2014, ss.22
- XVIII. **The Role of Segmentation Interval in Detecting Seizure from EEG Series by using Embedding Entropy Metrics**  
AYDIN S.  
FEPS2014, Joint Meeting of the FEPS and the Hungarian Physiological Society, 27 - 30 Ağustos 2014
- XIX. **Complexity and Coherence Analysis on EEG of Patients with Obsessive Compulsive Disorder**  
AYDIN S., ARICA N., ERGÜL E., TAN O.  
FEPS2014, Joint Meeting of the FEPS and the Hungarian Physiological Society, Hırvatistan, 27 - 30 Ağustos 2014
- XX. **Investigation the Level of Neural Synchronization by Using Global Field Synchronization Method in Obsessive Compulsive Disorder**  
Ozcoban M. A. , Kara S., Tan O., Aydin S.  
18th National Biomedical Engineering Meeting (BIYOMUT), İstanbul, Türkiye, 16 - 17 Ekim 2014

- XXI. **Classification of sleep apnea types using EEG synchronization criteria**  
AYDIN S., EROĞUL O.  
2010 15th National Biomedical Engineering Meeting, Antalya, Türkiye, 21 - 24 Nisan 2010
- XXII. **Model Order Sensitivity of Burg Method for EEG Diagnosis**  
Aydin S.  
IEEE 16th Signal Processing and Communications Applications Conference, Aydın, Türkiye, 20 - 22 Nisan 2008, ss.66-67
- XXIII. **Parametric Power Spectrum Analysis of Epileptic Seizure**  
Aydin S.  
IEEE 16th Signal Processing and Communications Applications Conference, Aydın, Türkiye, 20 - 22 Nisan 2008, ss.26-29
- XXIV. **Algebraic Perspectives Of Background EEG Elimination**  
Aydin S.  
19th International EURASIP Conference (BIOSIGNAL), Brno, Çek Cumhuriyeti, 01 Haziran 2008, ss.98-100
- XXV. **1-D Orthogonal Perspectives Of Auditory Brain Activities**  
Aydin S.  
19th International EURASIP Conference (BIOSIGNAL), Brno, Çek Cumhuriyeti, 01 Haziran 2008, ss.101-106
- XXVI. **An assessment of Tikhonov regularizations to evoked brain signals**  
Aydin S.  
ISPA 2007 - 5th International Symposium on Image and Signal Processing and Analysis, İstanbul, Türkiye, 27 - 29 Eylül 2007, ss.248-253
- XXVII. **Basic linear filters in extracting of auditory evoked potentials**  
Aydin S.  
5th International Symposium on Image and Signal Processing and Analysis, İstanbul, Türkiye, 27 - 29 Eylül 2007, ss.242-247

## Desteklenen Projeler

Aydin S., Dağ O., Yükseköğretim Kurumları Destekli Proje, Developing Connectivity Model from Neuroelectrical Brain Activities based on Graph Theory (Çizgi Kuramı Ağlarıyla NöroElektriksel Beyin Aktivitelerinden Bağlantısallık Modeline Geçiş), 2020 - 2021

## Bilimsel Hakemlikler

FRONTIERS IN PHYSIOLOGY, SCI Kapsamındaki Dergi, Ekim 2020  
IEEE JOURNAL OF BIOMEDICAL AND HEALTH INFORMATICS, SCI Kapsamındaki Dergi, Ekim 2020  
BMC PSYCHIATRY, SCI Kapsamındaki Dergi, Ağustos 2020  
IEEE TRANSACTIONS ON NEURAL SYSTEMS AND REHABILITATION ENGINEERING, SCI Kapsamındaki Dergi, Ocak 2020  
IEEE ACCESS, SCI Kapsamındaki Dergi, Aralık 2019  
CLINICAL EEG AND NEUROSCIENCE, SCI Kapsamındaki Dergi, Temmuz 2019  
BMC PSYCHIATRY, SCI Kapsamındaki Dergi, Ocak 2019  
IEEE Journal of Biomedical and Health Informatics, SCI Kapsamındaki Dergi, Kasım 2018

## Bilimsel Danışmalıklar

TÜBİTAK 1001 PROJESİ, Bilimsel Projeler İçin Yapılan Danışmanlık, Hacettepe Üniversitesi, Tıp Fakültesi (Türkçe), Temel Tıp Bilimleri Bölümü, Türkiye, 2018 - Devam Ediyor

## **Davetli Kongre ve Sempozyum Faaliyetleri**

45. ULUSAL FİZYOLOJİ KONGRESİ, Çalışma Grubu, İzmir, Türkiye, 2019

### **Atıflar**

Toplam Atıf Sayısı (WOS):208

h-indeksi (WOS):8