

YARI ZAMANLI AKADEMİK PERSONEL  
BİLGİ FORMU



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| Adı ve Soyadı:   | Mahmut HORTAÇSU     |
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Eğitim Bilgileri:

| Derece                     | Bölüm/Program         | Universite                | Yıl  |
|----------------------------|-----------------------|---------------------------|------|
| Lisans                     | Elektrik Mühendisliği | Robert Kolej Yüksek Okulu | 1966 |
| Y. Lisans                  | -                     | -                         | -    |
| Doktora/Sanatta Yeterlilik | Fizik                 | Pittsburgh Üniversitesi   | 1971 |
| Doç./Prof.                 | Fizik                 | Boğaziçi Üniversitesi     | 1982 |

Akademik Unvanlar/Görevler/Deneyimler:

| Görev Unvanı | Tanımı        | Görev Yeri                   | Yıl               |
|--------------|---------------|------------------------------|-------------------|
| Doçent       | Öğretim Üyesi | Boğaziçi Üniversitesi        | 1972<br>-<br>1986 |
| Profesör     | Öğretim Üyesi | İstanbul Teknik Üniversitesi | 1986<br>-<br>2010 |

MSGSU'de Verdiği Dersler

| Akademik Yıl | Dönem | Ders Adı                        | Zorunlu/Seçmeli |
|--------------|-------|---------------------------------|-----------------|
| 2023-2024    | Güz   | FIZ441 Fizikte Seçme Konular I  | Seçmeli         |
| 2022-2023    | Güz   | FIZ441 Fizikte Seçme Konular I  | Seçmeli         |
|              | Bahar | FIZ442 Fizikte Seçme Konular II | Seçmeli         |
| 2021-2022    | Güz   | FIZ441 Fizikte Seçme Konular I  | Seçmeli         |
|              | Bahar | FIZ442 Fizikte Seçme Konular II | Seçmeli         |

Diğer Kurumlarda Verdiği Dersler (Daha fazlası için alta satır ekleyiniz.)

| Akademik Yıl | Dönem | Ders Adı | Kurum Adı |
|--------------|-------|----------|-----------|
|--------------|-------|----------|-----------|

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|-------------|---|
| Yabancı Dil | Seviyesi (Sınav Adı ile Birlikte Notu veya A1/A2/B1/B2/C1/C2 düzeyi): |
| İngilizce   | A1  |

| <b>Alanında Yayın:</b>  |
|---|
| 1. M. Hortacsu, R. Seiler, B. Schroer, "Conformal Symmetry and Reverberations", Physical Review D5, 2519 (1972).  |
| 2. M. Hortacsu, "On Conformal Covariance in Thiring Model", Nuovo Cimento 34A, 411 (1973).  |
| 3. M. Hortacsu, "Demonstration of Noncausality in the Rarita – Schwinger Equation", Physical Review D9, 928, (1974)   |
| 4. M. Hortacsu, "The Reality Symmetry in Thiring Model", Nuovo Cimento 34A, 639 (1976).   |
| 5. M. Hortacsu, "Electromagnetic Contributions to the Thiring Model Effective Potential ", Nuovo Cimento 36A (1976) 43.                                     |
| 6. M. Hortacsu, "Scattering Solutions in a Potential Derived from the Bound State Solutions for the Massive Thiring Model", Nuovo Cimento 35A, 518 (1976).  |
| 7. M. Hortacsu, "Confined Solutions of the Thiring Model Coupled to a Schwinger Field", Physical Review D15, 3003 (1977).                                   |
| 8. M. Hortacsu, "Reflectivity of Solutions in the Massive Thiring Model Potential", Physical Review D15, 3760 (1977).                                       |
| 9. M. Hortacsu, "Interactions of Instantons with a Fermion Field in a 1+1 Dimensional Model", Physical Review D20, 496 (1979).                              |
| 10. M. Hortacsu, B. Schroer, H. J. Thun, "A Two Dimensional Sigma Model with Particle Productions", Nuclear Physics B154 (1979).                            |
| 11. M. Hortacsu, K. D. Rothe, B. Schroer, "Generalized Two Dimensional QED and Functional Determinants", Physical Review D20, 3203 (1979).                  |
| 12. M. Hortacsu, K. D. Rothe, B. Schroer, "1/N Expantions in Quantum Field Theories with Nonisoscalar Gluons", Nuclear Physics B164, 33 (1980).             |
| 13. M. Hortacsu, K. D. Rothe, B. Schroer, "Zero Energy Eigenstates for the Dirac Boundary Problem", Nuclear Physics B171, 363 (1980).                       |
| 14. M. Hortacsu, K. D. Rothe, B. Schroer, "Still More about the Fermion Determinant in QED <sup>2</sup> ", Physical Review D22, 3145 (1980).                |
| 15. M. Hortacsu, "1/N Calculation of CP(N-1) Structure Functions", Nuclear Physics B186, 573 (1981).  |
| 16. K. G. Akdeniz, M. Hortacsu, "Functional Determinant for the Thiring Model with Instanton", Nuovo Cimento 59A, 181 (1980).                               |
| 17. K. G. Akdeniz, M. Hortacsu, "Stability of Merons in Spinor Models", Physics Letters 114B, 254 (1982).   |
| 18. K. G. Akdeniz, M. Arik, M. Durgut, M. Hortacsu, S. Kaptanoglu, N. K. Pak, "Quantization of the Gursej Model", Physics Letters 116B, 34 (1982).          |
| 19. K. G. Akdeniz, M. Arik, M. Durgut, M. Hortacsu, S. Kaptanoglu, N. K. Pak, "A Pure Spinor Model With Compozite Gluons", Physics Letters 116B, 41 (1982). |
| 20. K. G. Akdeniz, M. Arik, M. Hortacsu, N. K. Pak, "Gauge Bosons as Composites of Fermions", Physics Letters 124B, 79 (1983).                              |
| 21. M. Hortacsu, "Index Theorem for Merons", Lett. Nuovo Cimento, 36, 109 (1983).   |
| 22. K. G. Akdeniz, M. Hortacsu, "New Meron Type Solution", Lett. Mathematical Physics, 7 (1983).  |
| 23. K. G. Akdeniz, M. Hortacsu, "A Meron Determinant Calculation", Lett. Nuovo Cimento, 36, 397 (1983).   |
| 24. M. Arik, M. Hortacsu, "Parton-like Behavior in a Pure Fermionic Model", Journal of Physics G, Nuclear Physics L119, 9 (1983).                           |

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| 25. M. Arik, M. Hortacsu, "Number of Families in a Pure Fermionoc Model", Journal of Physics G, Nuclear Physics L233, 9 (1983).  |
| 26. M.Arik, M. Hortacsu, J. Kalayci, "Composite Gluons and Magnetic Monopole", Lett. Mathematical Physics, 8, 145 (1984).  |
| 27. M. Hortacsu, N. K. Pak, "Is Electric Charge Conserved in Monopole-Fermion Scattering", Journal of Physics G, Nuclear Physics, 10, 1477 (1984).   |
| 28. M. Hortacsu, J. Kalayci, N. K. Pak, "A Possible Problem With the Rubakov - Callan Condansate Formation for Massive Fermions", Physics Letters 145B, 411 (1984).  |
| 29. M. Arik, M. Hortacsu, J. Kalayci, "Composite Gluons and Magnetic Monopoles", Journal of Physics G, Nuclear Physics, 11, 1 (1985).  |
| 30. K. G. Akdeniz, C. Dane, M. Hortacsu, "Eigenmodes for Fluctuations about the Classical Solutions in the Generalized Liouville Equation", Physical Review D37, 3074 (1988).                              |
| 31. M. Hortacsu, "A Quantization Scheme for Scale Invariant Pure Gauge Theories", Physics Letters B207, 457, (1988).   |
| 32. D. Dibekci, M. Hortacsu, J. Kalayci, "Monopole Solutions in Scale Invariant Theories", Physics Letters B209, 516 (1988).   |
| 33. M. Hortacsu, J. Kalayci, "Propagators in Higher Dimensional Scale Invariant Gauge Theories", Physics Letters B221, 319 (1989).   |
| 34. M. Hortacsu, "Quantum Fluctuations in the Field of an Impulsive Spherical Gravitational Wave", Classical and Quantum Gravity, 7, L165 (1990), Erratum: 9, 799 (1992).                                  |
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| 39. M. Hortacsu, Nese Ozdemir, "Reduction of Space- Time by a Constraint for C (0) Metrics", J. Mathematical Physics, 35, 173 (1994).  |
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| 55. Hortaçsu M, Birkandan T., "Three dimensional gravity in the presence of scalar fields.", GEN RELAT GRAVIT 35: 457-466 (2003) gr-qc/0104096   |
| 56. Hortaçsu M., "Explicit examples on conformal invariance.", Int.J.Theor.Phys.42:49, (2003) 1999 hep-th/0106080  |
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| 60. Birkandan T., Hortaçsu M. "Examples of Heun and Mathieu functions as solutions of wave equations in curved spaces", J.Phys. A40:1105-1116, (2007) gr-qc/0607108  |
| 61. Hortaçsu M., Lütfüoğlu B.C. "Renormalization group analysis of a Gursej-model-inspired field theory", Phys.Rev.D76:025013, (2007) hep-th/0703103   |
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| 64. Birkandan T., Hortaçsu M. "Singularity Structure and Stability Analysis of the Dirac Equation on the Boundary of the Nutku Helicoid Solution ", published as Comment on "Dirac equation in the background of the Nutku helicoid metric", J. Math. Phys. 49, 054101 (2008) arXiv: 0711.0612 [gr-qc] |
| 65. Birkandan T., Hortaçsu M. "Quantum Field Theory Applications of Heun Type Functions ", Rept.Math.Phys. 79 (2017) 81, : arXiv:1605.07848 [hep-th]   |
| 66. Birkandan T., Hortaçsu M. "Heun-type solutions for Schwarzschild metric with electromagnetic fields", Europhys.Lett. 119 (2017) no.2, arXiv:1704.00294 [math-ph]   |
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| 68. Hortaçsu, M., "Heun Functions and Some of Their Applications in Physics", Adv. High Energy Phys. 2018, 8621573 (2018)  |
| 69. Birkandan T., Hortaçsu M., "The zero mass limit of Kerr and Kerr-(anti)de Sitter space times", Gen. Rel Grav. 50 (2018) no.3, 28; Erratum: Gen. Rel. Grav. 50 (2018) no. 9, 109.   |
| <b>Alanında Eser (Daha fazlası için alta satır ekleyiniz.)</b>   |
| <b>Ödül:</b>   |
| 1. Tübitak Teşvik Ödülü (1982)   |
| 2. Humboldt Bursu (1978)   |
| <b>Sanatsal Faaliyetler (Daha fazlası için alta satır ekleyiniz.)</b>  |
| <b>Bilimsel Araştırma Projeleri (Daha fazlası için alta satır ekleyiniz.)</b>  |
| <b>Tez Danışmanlıkları:</b>  |
| <b>Doktora:</b>  |
| 1984, Jan Kalaycı (On the classical solutions of field theoretical models)   |
| 1994, Neşe Özdemir (Küresel dalgalarda vakum dalgalanmaları)   |
| 1999, Reyhan Kaya (Üç değişik metrik fon uzayında skaler bir alanın kuantum dalgalanmaları)  |
| 2002, Kayhan Ülker (Süpersimetrik alan teorilerinin kohomolojik yapıları)  |
| 2008, Ferhat Taşkın (Vektör tipi Gürsey modeli ve modelin renormalizasyon grubu analizi)   |
| 2008, Tolga Birkandan (A Study of Wave Equations in Five Dimensional Spacetimes Using Computational Methods)   |
| 2009, Bekir Can Lütfüoğlu (Non Perturbative Investigation of a Fermionic Model)  |
| <b>Yüksek Lisans:</b>  |
| 1978, Nihal Ercan (Renormalization properties and the existence of phase transitions)  |
| 1990, Neşe Özdemir (BFV metodu ile bağlı sistemlerdeki iz integrallerinin hesaplamayöntemi)  |
| 1990, Reyhan Kaya (BRST ve antiBRST simetrilerinde genel hayalet dekuiple teoremi)   |
| 1992, Ahmet Çatal (w cebirleri)  |
| 1992, Şevket Gündüz (İki boyutlu kuantum alan teorisinde sonsuz konform simetri)   |
| 1994, İskender Hancı (Anyon kuantum mekaniği: Chern-Simons modeli)   |
| 1995, Sebahattin Ünal (Chern-Simons terimi olmaksızın anyonların kuantum alanı)  |
| 1996, Yücel Enginer (Gravitasyon alanında parçacık yaratımı)   |
| 1997, Kayhan Ülker (Spherical gravitational shock waves)   |

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| 1998, B. Can Lütfüođlu (Düzlemsel bir gravitasyonel dalga fonunda propagasyon)   |
| 2000, Barış Yapışkan (Newman-Penrose formalizmi ve bazı uygulamaları)  |
| 2002, Tolga Birkandan (Üç boyutlu anti de Sitter uzayında Einstein denklemlerinin varlığında çözümler)                   |
| 2003, Hasan Tuncay Özçelik (2+1 boyutta konformal gerilim-enerji tansörlü bir skaler alanın kütle-çekim ile etkileşmesi) |
| 2006, Nail Al (Newman-Penrose formalizmi ve uygulamaları)  |