

Prof. ESRA DUMAN

Personal Information

Office Phone: [+90 312 202 1094](tel:+903122021094)

Email: eduman@gazi.edu.tr

Other Email: eerkusduman@gmail.com

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

International Researcher IDs

ORCID: 0000-0003-1848-5248

Publons / Web Of Science ResearcherID: AIC-7107-2022

ScopusID: 25936060600

Yoksis Researcher ID: 134010

Education Information

Doctorate, Ankara University, Fen Bilimleri Enstitüsü, Matematik (Dr), Turkey 1999 - 2005

Postgraduate, Ankara University, Institute Of Science, Matematik (YI) (Tezli), Turkey 1996 - 1999

Undergraduate, Ankara University, Fen Fakültesi, Matematik Bölümü, Turkey 1991 - 1995

Research Areas

Mathematics, Natural Sciences

Academic Titles / Tasks

Professor, Gazi University, Fen Fakültesi, Matematik Bölümü, 2017 - Continues

Associate Professor, Gazi University, Fen Fakültesi, Matematik Bölümü, 2010 - 2017

Researcher, University of Central Florida, Department of Mathematics, 2015 - 2015

Assistant Professor, Gazi University, Fen Fakültesi, Matematik Bölümü, 2007 - 2010

Assistant Professor, Canakkale Onsekiz Mart University, Fen-Edebiyat Fakültesi, Matematik Bölümü, 2006 - 2007

Research Assistant, Ankara University, Fen Bilimleri Enstitüsü, Matematik (Dr), 1996 - 2005

Supervised Theses

Erkus-Duman E., Bazı özel fonksiyonların q- analogları, Postgraduate, Y.AVCI(Student), 2019

Erkus-Duman E., A New Class Of Generating Functions For Some Polynomials, Postgraduate, Ö.AKYEL(Student), 2019

Erkus-Duman E., Bernstein Type And Beta Type Polynomials And Their Properties, Postgraduate, D.UÇAK(Student), 2019

Erkus-Duman E., The Multivariable Hypergeometric Functions, Doctorate, D.KORKMAZ(Student), 2017

Erkus-Duman E., Generating Functions For Bernoulli, Euler And Genocchi Polynomials, Postgraduate,

E.GÜLDOĞAN(Student), 2015

Erkus-Duman E., Çok değişkenli polinomların bazı aileleri için doğurucu fonksiyonlar, Doctorate, N.ÖZMEN(Student), 2014

Erkus-Duman E., Fibonacci ve lucas polinomları için doğurucu fonksiyonlar, Postgraduate, M.ŞENOCAK(Student), 2014

Erkus-Duman E., Generalized humber polynomials, Postgraduate, O.ÇELİK(Student), 2013

Erkus-Duman E, d- orthogonal polynomials, Postgraduate, G.ORUCOVA(Student), 2013
Erkus-Duman E, Classical orthogonal polynomials of a discrete variable, Postgraduate, B.AYATA(Student), 2012
Erkus-Duman E, Extended linear generating functions, Postgraduate, E.ÇİMEN(Student), 2012
Erkus-Duman E, Applications of fractional derivatives to hypergeometric functions, Postgraduate, B.ÜNAL(Student), 2011
Erkus-Duman E, Özel Fonksiyonların Bazı Özellikleri, Postgraduate, T.MERCAN(Student), 2009

Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Nonlinear approximation of vector-valued functions by Shepard operators based on max-product and max-min operations**
Duman O., DUMAN E.
Fuzzy Sets and Systems, vol.509, 2025 (SCI-Expanded)
- II. **Kantorovich Version of Vector-Valued Shepard Operators**
Duman O, Della Vecchia B, Erkus-Duman E.
Axioms, vol.13, no.3, pp.1-12, 2024 (SCI-Expanded)
- III. **A new family of two-variable polynomials based on hermite polynomials**
Erkus-Duman E, ÇİFTÇİ H.
MATHEMATICA SLOVACA, vol.72, no.4, pp.885-898, 2022 (SCI-Expanded)
- IV. **Gottlieb Polynomials and Their q-Extensions**
Erkus-Duman E, Choi J.
MATHEMATICS, vol.9, no.13, 2021 (SCI-Expanded)
- V. **On Some Families of New Constructed Polynomials**
Çiftci H., Erkuş-Duman E.
BULLETIN OF THE MALAYSIAN MATHEMATICAL SCIENCES SOCIETY, vol.43, pp.1111-1125, 2020 (SCI-Expanded)
- VI. **SOME NEW PROPERTIES OF UNIVARIATE AND MULTIVARIATE GOTTLIEB POLYNOMIALS**
Erkus-Duman E.
MISKOLC MATHEMATICAL NOTES, vol.19, no.2, pp.835-845, 2018 (SCI-Expanded)
- VII. **Harmonic functions associated with some polynomials in several variables**
Tasdelen F., AKTAŞ R., Erkus-Duman E.
TURKISH JOURNAL OF MATHEMATICS, vol.42, no.4, pp.1803-1814, 2018 (SCI-Expanded)
- VIII. **Generalized Vieta-Jacobsthal and Vieta-Jacobsthal-Lucas polynomials**
Yalcin N. F., TAŞCI D., Erkus-Duman E.
MATHEMATICAL COMMUNICATIONS, vol.20, no.2, pp.241-251, 2015 (SCI-Expanded)
- IX. **GENERATING FUNCTIONS FOR THE GENERALIZED BIVARIATE FIBONACCI AND LUCAS POLYNOMIALS**
Erkus-Duman E., TUĞLU N.
JOURNAL OF COMPUTATIONAL ANALYSIS AND APPLICATIONS, vol.18, no.5, pp.815-821, 2015 (SCI-Expanded)
- X. **FAMILIES OF GENERATING FUNCTIONS FOR THE JACOBI AND RELATED MATRIX POLYNOMIALS**
ALTIN A., ÇEKİM B., Erkus-Duman E.
ARS COMBINATORIA, vol.117, pp.257-273, 2014 (SCI-Expanded)
- XI. **The Laguerre polynomials in several variables**
AKTAŞ R., Erkus-Duman E.
MATHEMATICA SLOVACA, vol.63, no.3, pp.531-544, 2013 (SCI-Expanded)
- XII. **On a Family of Multivariate Modified Humbert Polynomials**
AKTAŞ R., Erkus-Duman E.
SCIENTIFIC WORLD JOURNAL, 2013 (SCI-Expanded)
- XIII. **Extended Jacobi Functions via Riemann-Liouville Fractional Derivative**
ÇEKİM B., Erkus-Duman E.
ABSTRACT AND APPLIED ANALYSIS, 2013 (SCI-Expanded)
- XIV. **STATISTICAL APPROXIMATION BY MEANS OF OPERATORS CONSTRUCTED BY q-LAGRANGE**

POLYNOMIALS

Erkus-Duman E.

JOURNAL OF COMPUTATIONAL ANALYSIS AND APPLICATIONS, vol.14, no.1, pp.67-77, 2012 (SCI-Expanded)

- XV. **STATISTICAL KOROVKIN-TYPE THEORY FOR MATRIX-VALUED FUNCTIONS**
DUMAN O., Erkus-Duman E.
STUDIA SCIENTIARUM MATHEMATICARUM HUNGARICA, vol.48, no.4, pp.489-508, 2011 (SCI-Expanded)
- XVI. **Miscellaneous properties of some multivariable polynomials**
Erkus-Duman E., ALTIN A., AKTAŞ R.
MATHEMATICAL AND COMPUTER MODELLING, vol.54, pp.1875-1885, 2011 (SCI-Expanded)
- XVII. **Statistical approximation properties of high order operators constructed with the Chan-Chyan-Srivastava polynomials**
Erkus-Duman E., DUMAN O.
APPLIED MATHEMATICS AND COMPUTATION, vol.218, no.5, pp.1927-1933, 2011 (SCI-Expanded)
- XVIII. **MATRIX EXTENSIONS OF POLYNOMIALS IN SEVERAL VARIABLES**
Erkus-Duman E.
UTILITAS MATHEMATICA, vol.85, pp.161-180, 2011 (SCI-Expanded)
- XIX. **STATISTICAL RATES IN APPROXIMATION BY POSITIVE LINEAR OPERATORS**
Erkus-Duman E.
MISKOLC MATHEMATICAL NOTES, vol.12, no.2, pp.159-166, 2011 (SCI-Expanded)
- XX. **Rates of Ideal Convergence for Approximation Operators**
DUMAN O., Ozarslan M. A., Erkus-Duman E.
MEDITERRANEAN JOURNAL OF MATHEMATICS, vol.7, no.1, pp.111-121, 2010 (SCI-Expanded)
- XXI. **On a multivariable extension for the extended Jacobi polynomials**
Altin A., AKTAŞ R., Erkus-Duman E.
JOURNAL OF MATHEMATICAL ANALYSIS AND APPLICATIONS, vol.353, no.1, pp.121-133, 2009 (SCI-Expanded)
- XXII. **Korovkin Type Error Estimates for Positive Linear Operators Involving Some Special Functions**
Dogru O., Erkus-Duman E.
TURKISH JOURNAL OF MATHEMATICS, vol.33, no.1, pp.41-53, 2009 (SCI-Expanded)
- XXIII. **Statistical Approximation for Stochastic Processes**
Anastassiou G. A., DUMAN O., Erkus-Duman E.
STOCHASTIC ANALYSIS AND APPLICATIONS, vol.27, no.3, pp.460-474, 2009 (SCI-Expanded)
- XXIV. **A q-extension of the Erkus-Srivastava polynomials in several variables**
Erkus-Duman E.
TAIWANESE JOURNAL OF MATHEMATICS, vol.12, no.2, pp.539-543, 2008 (SCI-Expanded)
- XXV. **Integral-type generalizations of operators obtained from certain multivariate polynomials**
Erkus-Duman E., DUMAN O.
CALCOLO, vol.45, no.1, pp.53-67, 2008 (SCI-Expanded)
- XXVI. **Statistical rates on the multivariate approximation theory**
Duman O., Erkus E., Gupta V.
MATHEMATICAL AND COMPUTER MODELLING, vol.44, pp.763-770, 2006 (SCI-Expanded)
- XXVII. **Statistical approximation of certain positive linear operators constructed by means of the Chan-Chyan-Srivastava polynomials**
Erkus E., Duman O., Srivastava H. M.
APPLIED MATHEMATICS AND COMPUTATION, vol.182, no.1, pp.213-222, 2006 (SCI-Expanded)
- XXVIII. **Approximation of continuous periodic functions via statistical convergence**
Duman O., Erkus E.
COMPUTERS & MATHEMATICS WITH APPLICATIONS, vol.52, pp.967-974, 2006 (SCI-Expanded)
- XXIX. **The q-Lagrange polynomials in several variables**
Altin A., Erkus E., Tasdelen F.
TAIWANESE JOURNAL OF MATHEMATICS, vol.10, no.5, pp.1131-1137, 2006 (SCI-Expanded)
- XXX. **Families of linear generating functions for polynomials in two variables**

- Altin A., Erkus E., Oezarslan M. A.
INTEGRAL TRANSFORMS AND SPECIAL FUNCTIONS, vol.17, no.5, pp.315-320, 2006 (SCI-Expanded)
- XXXI. **A unified presentation of some families of multivariable polynomials**
Erkus E., Srivastava H. M.
INTEGRAL TRANSFORMS AND SPECIAL FUNCTIONS, vol.17, no.4, pp.267-273, 2006 (SCI-Expanded)
- XXXII. **On a multivariable extension of the Lagrange-Hermite polynomials**
Altin A., Erkus E.
INTEGRAL TRANSFORMS AND SPECIAL FUNCTIONS, vol.17, no.4, pp.239-244, 2006 (SCI-Expanded)
- XXXIII. **A Korovkin type approximation theorem in statistical sense**
Erkus E., Duman O.
STUDIA SCIENTIARUM MATHEMATICARUM HUNGARICA, vol.43, no.3, pp.285-294, 2006 (SCI-Expanded)
- XXXIV. **A-statistical extension of the Korovkin type approximation theorem**
Erkus E., Duman O.
PROCEEDINGS OF THE INDIAN ACADEMY OF SCIENCES-MATHEMATICAL SCIENCES, vol.115, no.4, pp.499-508, 2005 (SCI-Expanded)
- XXXV. **A note on the Lagrange polynomials in several variables**
Erkus E., Altin A.
JOURNAL OF MATHEMATICAL ANALYSIS AND APPLICATIONS, vol.310, no.1, pp.338-341, 2005 (SCI-Expanded)

Articles Published in Other Journals

- I. **Appell-Type Changhee Polynomials in the Framework of Fibonomial Calculus**
Çakır B. C., DUMAN E.
Dolomites Research Notes on Approximation, vol.18, no.2, pp.56-63, 2025 (ESCI)
- II. **Advances in the generalized Cesàro polynomials**
Özmen N., Erkuş-Duman E.
BULLETIN OF THE KARAGANDA UNIVERSITY-MATHEMATICS, vol.116, no.4, pp.159-169, 2024 (ESCI)
- III. **Advances in the Continuous Dual Hahn Polynomials**
DUMLUPINAR M., DUMAN E.
JOURNAL OF MATHEMATICAL EXTENSION, vol.17, no.4, pp.1-18, 2023 (ESCI)
- IV. **The Meixner Polynomials in Several Variables**
Özmen N., Erkuş-Duman E.
International Journal of Applied Physics and Mathematics, vol.9, no.3, pp.144-151, 2019 (Peer-Reviewed Journal)
- V. **Extended Multivariable Fourth Type Horn Functions**
Düzgün D., Erkuş-Duman E.
Gazi University Journal of Science, vol.32, no.1, pp.225-240, 2019 (ESCI)
- VI. **ON THE GOTTLIEB POLYNOMIALS IN SEVERAL VARIABLES**
Erkuş-Duman E., Özmen N.
FACTA UNIVERSITATIS-SERIES MATHEMATICS AND INFORMATICS, vol.34, pp.927-940, 2019 (ESCI)
- VII. **Generating Functions for k-Hypergeometric Functions**
Düzgün D., Erkuş-Duman E.
International Journal of Applied Physics and Mathematics, vol.9, no.3, pp.119-126, 2019 (Peer-Reviewed Journal)
- VIII. **Fibonacci and Lucas Differential Equations**
Erkuş-Duman E., Çiftci H.
Application and applied mathematics, vol.13, no.2, pp.756-763, 2018 (ESCI)
- IX. **Some Generating Functions For a Class of Hypergeometric Polynomials**
Özmen N., Erkuş-Duman E.
Gazi University Journal of Science, vol.31, no.4, pp.1179-1190, 2018 (ESCI)
- X. **An Extension of a Class of Generating Functions For The Cesaro Polynomials of Three Variables**
Özmen N., Erkuş-Duman E.

- Journal of Science and Arts, vol.45, no.4, pp.939-950, 2018 (ESCI)
- XI. **Some Families of Generating Functions for the Generalized Cesaro Polynomials**
Özmen N., Erkuş-Duman E.
Journal Of Computational Analysis And Applications, vol.25, no.4, pp.670-683, 2018 (Scopus)
- XII. **The Laguerre Type d-Orthogonal Polynomials**
Düzgün D., Erkuş-Duman E.
Journal of Science and Arts, vol.1, no.42, pp.95-106, 2018 (ESCI)
- XIII. **ON THE POISSON CHARLIER POLYNOMIALS**
Özmen N., Erkuş-Duman E.
Serдика Mathematical Journal, vol.41, pp.457-470, 2015 (Peer-Reviewed Journal)
- XIV. **A generalization of the extended Jacobi polynomials in two variables**
Aktaş R., Erkuş-Duman E.
Gazi University Journal of Science, vol.28, no.3, pp.503-521, 2015 (Scopus)
- XV. **New generating functions for the Konhauser matrix polynomials**
Erkuş-Duman E., Çekim B.
Communications de la Faculté des Sciences de l'Université d'Ankara, vol.63, no.1, pp.35-41, 2014 (Peer-Reviewed Journal)
- XVI. **Integral Representations for Bessel Matrix Functions**
Çekim B., Erkuş-Duman E.
Gazi University Journal of Science, vol.27, no.1, pp.663-667, 2014 (Scopus)
- XVII. **On a hybrid family of summation integral type operators**
Gupta V., Erkuş E.
Journal of Inequalities in Pure and Applied Mathematics, vol.7, no.1, pp.1-11, 2006 (Peer-Reviewed Journal)
- XVIII. **The multivariate q Lagrange Hermite polynomials**
Erkuş E.
International Journal of Computational and Numerical Analysis and Applications, vol.6, no.2, pp.143-151, 2004 (Peer-Reviewed Journal)

Books

- I. **Extended Multivariable Hypergeometric Functions**
Düzgün D., Erkuş-Duman E.
in: Analysis, Probability, Applications, and Computation, Lindahl K., Lindström T., Rodino L., Toft J., Wahlberg P., Editor, Birkhäuser, Cham, Vaxjö, pp.17-25, 2019
- II. **On the Generalized Sylvester Polynomials**
Özmen N., Erkuş-Duman E.
in: Analysis, Probability, Applications, and Computation, Karl-Olof Lindahl, Torsten Lindström, Luigi G. Rodino, Joachim Toft, Patrik Wahlberg, Editor, Birkhäuser, Cham, Vaxjö, pp.47-55, 2019
- III. **On the g-Jacobi Matrix Functions**
Çekim B., Erkuş-Duman E.
in: Advances in Applied Mathematics and Approximation Theory, Anastassiou, Duman, Editor, Springer-Verlag, Zürich, pp.73-84, 2013

Papers Published in Refereed Scientific Meetings

- I. **A GENERALIZATION FOR THE HERMITE-BASED APPELL POLYNOMIALS**
SOYARSLAN G., DUMAN E.
6 th INTERNATIONAL CONFERENCE ON MULTIDISCIPLINARY SCIENTIFIC STUDIES, İstanbul, Turkey, 2 - 03 June 2023, pp.298-305

- II. SOME NEW RESULTS FOR THE WILSON POLYNOMIALS**
 DURLUPINAR M., DUMAN E.
 ANKARA INTERNATIONAL CONGRESS ON SCIENTIFIC RESEARCH-VIII, Ankara, Turkey, 9 - 11 June 2023, pp.131-142
- III. A Generalization of Cesaro Polynomials in Several Variables and the Generalized Lauricella Functions**
 Erkus-Duman E., Özmen N.
 7th International Conference on Recent Advanced in Pure and Applied Mathematics, Muğla, Turkey, 25 September 2020, pp.90
- IV. On Some Generalized Polynomials**
 Korkmaz Düzgün D., Erkus-Duman E.
 7th International Conference on Recent Advanced in Pure and Applied Mathematics, Muğla, Turkey, 25 September 2020, pp.49
- V. Generating Functions for The Extended Multivariable Fourth Type Horn Functions**
 Düzgün D., Erkuş-Duman E.
 The 8th International Conference On Pure and Applied Mathematics, Brussels, Belgium, 22 - 25 July 2019
- VI. Generating Functions for k-Hypergeometric Functions**
 Düzgün D., Erkuş-Duman E.
 ICPAM, Budapest, Hungary, 10 - 14 July 2018
- VII. Gottlieb Polynomials in several Variables**
 Özmen N., Erkuş-Duman E.
 V. Kadın Matematikçiler Derneği Çalıştayı, Diyarbakır, Turkey, 5 - 07 May 2018, pp.12
- VIII. On the generalized Sylvester polynomials**
 Erkuş-Duman E., Özmen N.
 ISAAC 2017, Vaxjö, Sweden, 14 - 18 August 2017, pp.19
- IX. EXTENDED MULTIVARIABLE HYPERGEOMETRIC FUNCTIONS**
 Erkuş-Duman E., Düzgün D.
 ISAAC 2017, Vaxjö, Sweden, 14 - 18 August 2017
- X. Extended Multivariable Fourth Type Horn Functions**
 Erkuş-Duman E., Düzgün D.
 International Conference on Mathematics and Mathematics Education, Şanlıurfa, Turkey, 11 - 13 May 2017
- XI. On the Cesaro polynomials of three variables**
 Özmen N., Erkuş-Duman E.
 International Conference on Mathematics and Engineering, İstanbul, Turkey, 10 - 12 May 2017, pp.378
- XII. Some New Properties of the Extended Generalized Hypergeometric Functions**
 Düzgün D., Erkuş-Duman E.
 ETAMM 2016, Perpignan, France, 30 May - 03 June 2016
- XIII. On the Generalized Cesaro Polynomials**
 Erkuş-Duman E., Özmen N.
 ETAMM 2016, Perpignan, France, 30 May - 03 June 2016
- XIV. On the Poisson Charlier Polynomials**
 Özmen N., Erkuş-Duman E.
 International Conference: Mathematics Days in Sofia, Sofija, Bulgaria, 7 - 10 July 2014, vol.41, pp.457-470
- XV. Some Families of Generating Functions for Laguerre and Charlier Types d Orthogonal Polynomials**
 Düzgün D., Erkuş-Duman E.
 International Conference on Recenet Developments in Pure and Applied Mathematics - ICRAPAM 2014, Antalya, Turkey, 6 - 09 November 2014
- XVI. On the Generalized Bernoulli Euler and Genocchi Polynomials**
 GÜLDOĞAN E., ERKUŞ-DUMAN E.
 International Conference on Recenet Developments in Pure and Applied Mathematics - ICRAPAM 2014, Antalya, Turkey, 6 - 09 November 2014

- XVII. Some Results For A Family of Multivariable Polynomials**
Özmen N., Erkuş-Duman E.
11th International Conference of Numerical Analysis and Applied Mathematics, Rodos, Greece, 21 - 27 September 2013, vol.1558, pp.1124-1127
- XVIII. Çok değişkenli Gottlieb polinomları**
Erkuş-Duman E.
26.Ulusal Matematik Sempozyumu, Diyarbakır, Turkey, 4 - 07 September 2013
- XIX. On the g Jacobi matrix functions**
Çekim B., Erkuş-Duman E.
Advances in Applied Mathematics and Approximation Theory, Ankara, Turkey, 17 - 20 May 2012
- XX. Laguerre ve Konfluent Hipergeometrik Fonksiyonların Bir Matris Genellemesi**
Çekim B., Erkuş-Duman E.
7. Ankara Matematik Günleri, Ankara, Turkey, 31 May - 01 June 2012
- XXI. Approximation by matrix valued linear positive operators**
Duman O., Erkuş-Duman E.
Conference on Matrix Analysis and its Applications – MAT TRIAD, Lisbon, Portugal, 12 - 16 July 2011
- XXII. Integral representations for a class of polynomials in two variables**
Erkuş-Duman E.
Mathematical Analysis, Differential Equations and Their Applications, Gazimagusa, Cyprus (Kktc), 12 - 15 September 2008
- XXIII. Some Mixed Generating Relations for Some Families of Multivariable Polynomials**
Erkuş-Duman E.
II. Ankara Matematik Günleri, Ankara, Turkey, 22 - 23 May 2008
- XXIV. Pozitif lineer operatörler yardımıyla sürekli periyodik fonksiyonlara istatistiksel yaklaşım**
Erkuş-Duman E., Duman O.
2nd Turkish World Mathematics Symposium, Sakarya, Turkey, 4 - 07 July 2007
- XXV. Çok Değişkenli Polinomların Çeşitli Ailelerinin Ortak Bir Gösterimi**
Erkuş-Duman E.
XIX. Ulusal Matematik Sempozyumu, Kütahya, Turkey, 22 - 25 August 2006

Metrics

Publication: 81

Citation (WoS): 469

Citation (Scopus): 378

H-Index (WoS): 12

H-Index (Scopus): 11

Awards

Erkuş-Duman E., Best Organizer Award, 10Th International Conference On Mechanical And Aerospace Engineering, Belçika, July 2019

Non Academic Experience

Gazi Üniversitesi, Öğretim Üyesi

University of Central Florida, Ziyaretçi öğretim üyesi (visiting Scholar)

Çanakkale Onsekiz Mart Üniversitesi, Öğretim Üyesi

